ISSN 0019-6215

Vol.70 December 2008 No.4

INDIAN PSYCHOLOGICAL REVIEW

(Quarterly)

Editor in Chief
Labh Singh

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R.L. Bharadwaj

AGRA PSYCHOLOGICAL RESEARCH CELL
Tiwari Kothi, Belanganj, Agra - 282004 (U.P.) India

INDIAN PSYCHOLOGICAL REVIEW
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Vol.70 December 2008 No.4

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Indian Psychological Review
Vol. 70, No. 4, Year 2008, Page 169

G.M. College of Education
Raipur, Bantalab
Jammu.
Acc. No. 100 - 9/1
Dated 24.2.09

CONTENTS

Impact of Job Status on Marital Adjustment of Working Women
S. Rani and [illegible] Asthana 171-176

◆ Relationship of Selected Independent Variables with Regard to Role Satisfaction and Role Stress and Causative Factors for Satisfaction and Stress in Their Life
B. Sandhya Rani and M. Sarada Devi 177-182

◆ Childhood Problems and Their Resolutions—A Perception of Rural Boys and Girls
Divya Jain and Dr. (Mrs.) Suman Audichya 183-187

◆ Utilizing A "Hard Science" Type Model to Study Interactions Between Emotion and Cognition
Hunter Shirley 189-211

◆ Academic Achievement as Related to Achievement Motivation and Parental Background
R.C. Pandey 213-216

◆ Psychopathological Correlates of Suicide Ideation
C.P. Khokhar 217-224

New Publications

SAMVAIDHNA'S VALUE SCALE (VS)

Dr. Amit Abraham and Dr. Rashmi Pant

This is a five point rating scale to ascertain value strength of the following value dimensions : Religious, Social, Health, Democra Aesthetic, Economic, Knowledge, Power and Family Prestige.

SAMVAIDHNA'S VOCATIONAL PREFERENCE SCALE (VPS)

Dr. Amit Abraham and Dr. Rashmi Pant

This is a five point rating scale to ascertain the vocational preference in the following areas : Computational, Social, Humanitarian, Scientific, Artistic, Business, Literary, Executive and Persuasive.

SAMVAIDHNA'S CLINICAL CASE STUDY (CCS)

Dr. Vibha Sharma and Dr. Amit Abraham

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Agra Psychological Research Cell
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Indian Psychological Review
Vol. 70, No. 4, Year 2008, Page 171-176

IMPACT OF JOB STATUS ON MARITAL ADJUSTMENT OF WORKING WOMEN

S. Rani* and M. Asthana**

The present study aims to assess the impact of job status on marital adjustment of women pursuing different occupation. 300 maried women (100 doctors, 100 nurses and 100 teachers) with mean age of 47.17 years were selected from Allahabad district for the sample of the study. A comprehensive marital adjustment inventory by Mishra and Srivastava (1993) and personal data sheet were used to collect the necessary data. It was found that job status of women have significant effect on marital adjustment of women. Doctors and teachers scored high on marital adjustment in comparison to nurses.

The problem of adjustment is the vital problem of the modern world. odern life seems to produce maladjusted behaviors at a faster rate among dividuals. Marital adjustment is the main problem of working women in the ocess of adjustment with their job demands and family demands. It is often ivocated that in order to bring women to equal status, economic dependence necessary, as a result women are being providual with various jobs in the iciety.

A number of working women have additional problems like marital djustment, emotional and social problems etc in the process of adjustment.

Marital adjustment is the state is which there is an over all feeling in isband and wife of happiness and satisfaction with their marriage and with ach other.

Bhattacharjee and Batt (1983) found that married working women were etter adjusted, more stable and experienced and had less psychological onflicts compared to non-working married women.

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Shukla (1988) reported that employed wives enjoyed power economically significant areas like insurance and investments.

Yadav, V. and Halyal (2000) obtained significant positive correla between surgency agreeableness, emotional stability, intellect and ma satisfaction. Conscientiousness was negatively correlated with marital satisfac and the relationship was not significant. Implications for encouraging intellectual development and creative activities of teachers were discussed.

The present investigation is aimed to study the impact of work status status) on marital adjustment of working women. Even though many researc have been conducted abroad on marital adjustment there is a dearth of s in India. So the present research was taken up with the growing incre marital disharmony, dissatisfaction and divorce rate in the present society problem in marital adjustment is growing high. The problem is more visualiz working women. Job status seems to be important in adjustment o individual. So there is a need to study the role of job status in marital adjust of working women.

The present study aimed to assess the effect of job status on mar subjective of working women.

It was hypothesized that "There would be significant effect of job status marital adjustment of working women." The women pursuing higher status of j will have higher level of marital adjustment.

METHOD

Sample :

The sample consisted of 300 working women pursuing different occupati of at Allahabad district. Three occupational groups have been taken : docto teachers and nurses. The mean age of the sample was 49.17 years. Purpos sampling was done for the selection of respondents.

Tools :

The following tools were used to obtain relevant data in the present study

(1) Comprahensive Marital Adjustment inventory (CMA) :

This test was constructed by Mishra and Srivastava (1993). This sc consists of 55 items with five response alternative. It measures six dimensions marital adjustment which are :

(i) Feeling for spouse
(ii) Harmonious relations
(iii) Communications
(iv) Mutual Understanding
(v) Sexual relations
(vi) Other factors related to marital life

Higher scores on this scale are indicative of better marital adjustment. This ale is highly reliable and valid.

) Personal Data Sheet :

This sheet has been prepared by the researcher to get the information bout respondents. The information of name, age and work status (job status) ere found by this sheet.

rocedure :

The tools were administered individually to the total sample. The scoring as done with the help of manual.

RESULTS AND DISCUSSION

The objective of the present study was to assess the effect of job status on arital adjustment of working women.

Mean and standard deviations for various dimensions as well as total cores of marital adjustment in doctors, teachers and nurses are presented in able-1.

Table-1 : Mean and SD of Scores on Various Dimension of Marital Adjustment.

Job status	Score	Dimensions of marital adjustment						
		Felling for spou	Harmonious rel.	Communication	Mutual-underion	Sexual relation	Other factors	Total score
Doctors (*n* = 100)	Mean *SD*	40.76 6.38	52.53 7.70	20.03 5.03	42.98 6.79	27.87 4.37	18.72 3.20	201.02 21.49 (better)
Teachers (*n* = 100)	Mean *SD*	41.64 9.36	52.01 8.94	22.14 6.77	43.59 6.98	27.48 4.87	17.90 3.79	202.86 30.86 (better)
Nurse (*n* = 100)	Mean *SD*	32.59 7.43	44.35 9.56	18.35 8.44	35.54 8.64	23.00 6.19	16.67 4.50	168.94 29.59 (average)

Mean score shows that over all marital adjustment of doctors is of "better" marital adjustment. Teachers have also "better" marital adjustment but nurses have "average" level of marital adjustment.

One way analysis of variance was applied to test the impact of job status on marital adjustment of working women. The results regarding anova are presented in the table-2.

The summary table of one way analysis of variance shows that ***F*** ratio of various dimensions and total scores on marital adjustment are significant at .01 level. It shows that the marital adjustment of women are significantly influenced by job status.

Table-2 : Impact of Job Status on Marital Adjustment (Summar one way ANOVA).

		Sum of Sq	*df*	mean square	*F*	
Feeling for spouse	Between Groups	498.860	2	2490.43	40.677	
	Within Groups	18183.47	297	61.224		
	Total	23164.33	299			
Harmanious relations	Between Groups	4195.280	2	2097.640	27.247	
	Within Groups	22864.650	297	76.985		
	Total	27059.930	299			
Communi-cation	Between Groups	721.287	2	360.643	7.585	
	Within Groups	14121.700	297	47.548		
	Total	14822.98	299			
Mutual Under-standing	Between Groups	4017.607	2	2008.803	35.511	.0
	Within Groups	16800.99	297	56.569		
	Total	20818.59	299			
Sexual relation	Between Groups	1464.647	2	7.32.323	27.024	.0
	Within Groups	8048.270	297	27.099		
	Total	9512.917	299			
Other factors	Between Groups	212.927	2	106.463	7.101	.01
	Within Groups	4451.270	297	14.987		
	Total	4664.197	299			
Total score	Between Groups	72769.280	2	36384.640	47.651	.01
	Within Groups	226777.6	297	763.56		
	Total	299546.9	299			

Therefore the result shows that there is significant differential impact of job status on marital adjustment of women.

Further, to find out the nature of this differential effect, intergroup comparisions were made. Findings are presented in table-3.

The table shows that there is no difference on any dimension as well as total marital adjustment except communication between doctors and teachers. In other words these two groups are approximately similar on marital adjustment.

Doctors and nurses have significant difference on each dimension of arital adjustment., Doctors have higher level of marital adjustment in omparison to nurses.

Table-3 : *t* ratios for Intercomparision for three Groups of Women for Various Dimensions of Marital Adjustment.

Dimension	Doctors and Teachers	Doctors and Nurses	Teacher and Nurses
eling for spouse	0.77	8.42**	7.60**
Harmanious relations	0.44	6.70**	5.89**
Communication	2.54*	2.01*	3.54**
Mutual Understanding	0.63	6.79**	7.31**
Sexual relation	0.60	6.49**	7.31**
Other factors	0.87	3.76**	2.12*
Total score	0.49	8.78**	7.94**

There are also significant difference on marital adjustment between teachers and nurses. The teachers have higher level of marital adjustment in comparison to nurses on each dimension of marital adjustment.

Therefore the results show that there is statistically significant impact of job status on marital adjustment of working women.

The hypothesis that "There would be significant effect of work status (job status) on marital adjustment among working women, and the women pursuing higher status of job will have higher level of marital adjustment", is accepted.

Based on the above finding it may be concluded that doctors and teachers have better marital adjustment in comparison to nurses.

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* Significant at .05 level

** Significant at .01 level

REFERENCE

Bhattacharjee, P. & Bhatt, K.K. (1983) Family adjustment of married working and n working women. ***Indian Journal of Clinical Psychology, 10,*** 497-501.

Misra, O.P. & Srivastava, SK (1993) Manual for Comprehensive Marital adjustme Inventory. Ajay printers and publishers.

Shukla, A. (1988) Marital role behaviors and marital relationship among single ar dual-career families. ***Indian Journal of Clinical Psychology 15,*** 84-88.

Yadav, V. & Halyal, P.S. UAS (2000) The influence of big five factors of persona marital satisfaction among male college teachers. ***Journal of Commu Guidance and Research 17,*** 119-127.

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Indian Psychological Review
Vol. 70, No. 4, Year 2008, Page 177-182

RELATIONSHIP OF SELECTED INDEPENDENT VARIABLES WITH REGARD TO ROLE SATISFACTION AND ROLE STRESS AND CAUSATIVE FACTORS FOR SATISFACTION AND STRESS IN THEIR LIFE

B. Sandhya Rani* and M. Sarada Devi**

The present study was conducted on 50 working and 50 non-working women. Interview schedule and extended satisfaction with life scale (1996) was used. The results revealed that respondents education and length of service significantly and negatively related to role stress whereas age, monthly income of family, occupation of spouse, number of children, working hours had not shown any significant relationship with role satisfaction and role stress of working and non-working women had satisfaction in their life because of having children and supportive husband, and stress due to heavy work load at home and at job place. Majority of the working women felt that working women had more life satisfaction and most of the non working women felt that non working women had more life satisfaction Majority of working and non-working women had more life satisfaction. Majority of working and non-working women felt that working women had more stress in their life.

Role satisfaction is defined as the sum total of perceptions of satisfaction of an individual in various roles viz., marital (wife), family (parental haemarex), social, recreational, work/job life.

Role stress is a state of tension created by multiple demands and conflicting directions from two or more individuals in the performance of a role, resulting in anxiety.

The relationship between age and marital life satisfaction is negative (Glenn, 1989). There was no significant correlation between job satisfaction and educational level *i.e.* degree level (Hogland, 1968). The total family income wa more for working women than that of non-working women (Shoba Rani, 2002 The age and role stress are negatively correlated (Holmes and Masuda, 1974 The negative and significant relationship between education and role stres (Dwivedi, 1989). Income was the crucial factor in deciding the role stress c women (Shirali and Bharati, 1986). Women were more stressed due to lon working hours, anxiety about client satisfaction, spending minimal time wi family and fiends, anxiety about profitability (Virk. J and Kumar N 1997).

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METHOD

Sample

The sample consisted of 100 women (50 working and 50 non-wor[illegible] women) from twin cities of Hyderabad and Secunderabad. All women were [illegible] age range of 20-40 years.

Tools

Interview schedule and modified extended satisfaction with life scale was used.

Data collection procedure

The data was collected through in depth interview method. The dat obtained was tabulated and analyzed by sing correlation coefficient, frequencie and percentages.

RESULTS AND DISCUSSION

Relationship of selected Independent variables with regard to role satisfaction and role stress and causative factors for satisfaction and stress in their life are presented in the following tables :

Relationship Between Selected Independent Variables and Role Satisfaction and Role Stress.

S.No.	Variables	Correlation coefficient	
		Satisfaction	Stress
1.	Age	– 102	– 0.185
2.	Education	0.112	– 0.520**
3.	Monthly Income of family	– 0.152	0.014
4.	Occupation of spouse	0.037	– 0.015
5.	Length of service	0.293*	– 0.470**
6.	Number of children	0.227	0.170
7.	Working hours	– 0.062	0.088

** Significant ($r > 0.246$)

** Significant ($r > 0.320$)

(1) Age

Role satisfaction

Respondent's age had not shown any significant relationship with role satisfaction depends on how the individual perceives them in their role performance but not on the age.

Role stress

Respondent's age had not shown any significant relationship with role stress of women. It might be due to the fact that it is not age, which gives rise to the role stress of working and non-working women.

(2) Education

Role satisfaction

Education had no significant relationship with role satisfaction of women. They felt that role satisfaction of women depends on their perception regarding role performance but not on education.

Role stress

Education was negatively and significantly related to role stress of women. This indicated that as the education level increased the level of role stress decreased.

(3) Monthly income of family

Role satisfaction and Role stress

There was no significant relationship found between role satisfaction and role stress with regard to occupation of spouse. It might be due to the fact that role satisfaction and role stress depends on the quality of relationship existing between the partners but not on spousal occupation.

(4) Length of service

Role satisfaction

Length of service was not significantly related to role satisfaction of women because it is not the length of service, which determines the role satisfaction but the quality of job which includes organizational factors like salary, professional fulfillment and efficiency.

Role stress

Length of service was significantly and negatively related to role stress of women. This might be due to the fact that as number of years increased women tend to cope up easily with their roles avoiding stress. Hence as the length of service increased the role stress decreased.

(5) Number of children

Role satisfaction and Role stress

Number of children had no significant relationship with role satisfaction and role stress of women. This might be due to the fact that women see child care as an essential part of being good mothers and hence is independent of the number of children.

(6) Working hours

Role satisfaction and Role stress

Working hours of respondent had no significant relationship with role satisfaction and role stress of working and non-working women. This might be due to the fact that role satisfaction and role stress depends on how an individual perceives them in their role performance.

Causative Factors for Satisfaction in Her Life

S. No.	Causative factors	Working women		Non-working women	
		Number	Percentage	Number	Percentage
1.	Supportive husband	39	78	35	70
2.	Children	49	98	44	88
3.	In-laws	14	28	17	34
4.	Parents	12	24	15	30
5.	Job	39	78	—	—
6.	House	5	10	13	26
7.	Supportive friends	9	18	9	18
8.	Completion of degree after marriage	6	12	10	20

Working and non-working women

The majority of the working and non-working women expressed that the causative factors for satisfaction in her life were having children and having supporting and carring husband. This might be due to the fact that Indian women think in such a way that having children and having supporting and helping husband are most important things in her which will give more life satisfaction.

Causative Factors for Stress in Her Life

S. No.	Problems	Working women		Non-working women	
		Number	Percentage	Number	Percentage
1.	Financial problems	14	28	20	40
2.	Misunderstanding with in-laws	25	50	30	60
3.	Misunderstandings with husband	13	26	16	32
4.	Misunderstandings with sister-in-law	4	8	8	16
5.	Children's education	11	22	15	30
6.	Heavy work at home and at job place	41	82	34	68
7.	Husband's job	7	14	8	16
8.	Lack of time to spend with family	28	56	—	—
9.	Frequent guests	—	—	12	24

Working women

Majority of the working women expressed that heavy work load at home and at job place were the causative factors for stress in their life. The might be due to the fact that women had to play dual roles of housewife and as well as earner and she had more responsibilities at home and at job place.

Non-working women

Majority of the non-working women expressed that heavy work load at home and misunderstandings with in-laws were the main causative factor for stress in their life. This might be due to the fact that housewife had to lay so many roles at home life wife, mother and daughter-in-law, because of this she had more responsibilities at home and she had to fulfill the needs of all family members.

Level of Satisfaction of Women

S. No.	Opinion	Working women		Non-working women	
		Number	Percentage	Number	Percentage
1.	Working women	37	74	22	44
2.	Non-working women	13	26	28	56

Working women

Majority of the working women expressed that working women had more life satisfaction. This was because the working women were educated and gainfully employed. They had more power in consoling the financial matters and children's future plans and they were also satisfied with the economic independence.

Non-working women

Majority of the non-working women expressed that non-working women had more life satisfaction. This might be due to the fact that they did not have high aspirations in their life. They sent more confortable to stay at home and be recognized as a house life.

Level of Stress of Women

S. No.	Opinion	Working women		Non-working women	
		Number	Percentage	Number	Percentage
1.	Working women	36	72	31	62
2.	Non-working women	14	28	19	38

Working and non-working women

Majority of the working and non-working women expressed that working women had more life stress. This was because when compared to non-working women, working women had to play dual role of housewife and earner. So she had so many responsibilities at home and at job place. She had to fulfill the roles of housewife and an earner.

CONCLUSION

Respondents education and length of service significantly and negatively related to role stress where as age, monthly income of family, occupation of spouse, number of children, working hours had not shown any significant relationship with role satisfaction and role stress of working and non-working women. Majority of the working and non-working women had satisfaction in this life because of having children and supporting husband, and stress due to heavy, workload as home and at job place. Majority of the working women self that working women had more life satisfaction and most of the non-working women felt that non-working women had more life satisfaction. Majority of working and non-working women felt that working women had more stress i their life.

REFERENCES

Dwivedi, R.S. (1989) ***Some correlates and cluster of organizational role stress among public sector personnel in India,*** Sage Publications, New Delhi.

Glenn, R. (1989) ***Women, work and marriage in urban India,*** Sage publications. New Delhi.

Hogland, R.M. (1968) ***Teacher personality organizational climate and teacher job satisfaction,*** Doctoral Dissertation Standard University.

Holmes, T.H. & Masuda, M. (1974) ***Life chance and illness susceptibility in B.S. Dohrenwend and B.P. Dohrenwend stressful life events : Their nature and effects*** (pp 45-72) Newyork : Wiley and Sons.

Shirali K.A. & Bharti S.P. (1986) ***Life stress, demographic variables and personality in eleven cases of possession in Shimla Tehsil***—Personality study and Group behaviour 6, 73-81.

Shoba, R.C. (2002) ***Satisfaction of married working and non-working women.*** Unpublished M.Sc. Thesis to Hyderabad. Andhra Pradesh Agricultural University.

Virk, J. & Kumar, N. (1997) ***Job stress and job involvement among basic employees. Indian Journal of Applied Psychology, 34,*** 28-33.

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Indian Psychological Review
Vol. 70, No. 4, Year 2008, Page 183-187

CHILDHOOD PROBLEMS AND THEIR RESOLUTIONS – A PERCEPTION OF RURAL BOYS AND GIRLS

Divya Jain* and Dr. (Mrs.) Suman Audichya**

The present study was an attempt to explore and identify the problems experienced and resolutions perceived by rural boys and girls (9-12 years) in late childhood period. The total sample for the present study consisted of 60 boys and 60 girls between the age group of 9-12 years, studying in government co-educational school of "Debari" village of Girva Panchayat Samiti Udaipur. The questionnaire and inventory constructed by Sharma and Gir (2000). Which were modified by the investigator and used to identify the problems experienced and to assess the resolutions perceived by the boys and girls in late childhood years. The findings indicate that girls experienced more problems than boys in parents, school and self related aspects. The major resolutions which the subjects perceived as resolving their problems were related to self and parent related aspects.

Late childhood is the period during which development attains one of its eak when most of the inner psychological conflicts are in a latent environment ptimally enjoys its influential role. The years from 9 to 12 are bridge between hildhood and adolescents. In this period a child's world is made up of primarily ne family, then the schools, teachers and peers. A close association is found etween school administration, school environment, teacher and school urriculum on the adjustment of children.

The children who are inhabitants of rural areas form a large but neglected ection of population because of the widespread rural poverty, illiteracy, lack of utritional and health care, educational and other infrastructure facilities for self evelopment and health living in rural areas. These sections of rural children are ubjected to deprivations of all kinds. In these years it is essential that school nd home understand and provide moral support to our children, so that hildren themselves face the challenges of life in the society in which they are iving and are able to move successfully in the society as an adult.

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** Assistant Professor, Department of Human Development and Family Studies, College of Home-Science, MPUAT, Udaipur (Rajasthan).

So the present study is an attempt to find out the problems experienced rural boys and girls in academic and non academic areas and their resolutions.

Therefore, the present study was undertaken with the following objective :

Objective

To assess the problems experienced and resolutions perceived by ru boys and girls in late childhood years.

METHOD

Sample

The present study was conducted in "Debari" village of Girva Pancha Samiti in the District of Udaipur, Rajasthan. The total sample for the pres study consisted of 60 boys and 60 girls between the age ranges of 9 to 12 yea studying in 5th to 8th standard, thus making a total of 120 respondent background information proforma was used to obtain the basic details rega the subjects and their families. The questionnaire and inventory constructed by Sharma and Gir (2000) were modified by the investigator and used to identify t problems experienced and to assess the resolutions perceived by the boys a girls in late childhood years. Mean scores, percentage and *Z*-test were used analyze the data.

RESULTS AND DISCUSSION

Table-1 gives the percentage distribution for selected aspects generatin academic and non academic problems experienced by boys and girls.

Table-1 : Percentage Distributions of Subjects for Problem Experienced in Selected Aspects. (*N* = 120

S. No.	Apects	Boys (*N* = 60)			Girls (*N* = 60)		
		Greater extent	Moderate extent	Less extent	Greater extent	Moderate extent	Less extent
Academic areas							
1.	Problem related to school	25.86	22.15	51.98	28.01	20.32	51.66
2.	Problems related to teacher	31.47	23.72	44.70	30.39	25.19	44.41
3.	Problems related to self in academic area	21.81	37.57	40.60	36.5	40	23.48
Non academic areas							
4.	Problems related to parents	12.6	24.33	63.06	48.6	33.2	18.2
5.	Problems related to peer	20.83	29.16	50	14.5	22.16	63.33
6.	Problems related to self in non academic area	32	26.66	41.16	36.33	22.83	40.83

As depicted in the table higher percentage of boys and girls were having problems at a lesser extent in school and teacher related aspects in academic areas. Similarly table further reveals that in the self related aspect girls (40 percent) experienced problems at a moderate extent than boys (37.5 percent). Table shows that in non academic areas of boys and girls experienced problems at a lesser extent in peers (63.33 percent girls and 50 percent boys) and self related aspects (40.83 percent girls and 41.16 percent boys). In self related aspects 36.33 percent girls and 32 percent boys experienced problems to a greater extent. In parent related aspect girls (48.61 percent) faced problems at a greater extent as compare to boys (12.6 percent).

The probable reasons for girls experiencing self related problems in school might be that the rural girls hesitate to ask questions in classroom. Girls are unable to express their quarries and views, also their home environment do not allow them to and interact with others, so they hesitate to raise questions in the classroom. The reason for most of the girls had problems at home might be frequent manifestations by their parents. They feel their home atmosphere as restrictive and unconducive to healthy adjustment moreover, due to widely prevalent gender discrimination, restrictions and possessiveness they experience more problems. The reason for girls having greater problems in self related aspect are that rural parents pay more attention to their sons, so the girls feel neglected and of less worth in their families.

Table-2 highlight the resolutions perceived by the subjects to overcome academic and non academic problems.

Table-2 : Major Areas of Resolution Perceived by Subjects for the Solution of Academic and non Academic Areas.

N = 120

S. No.	Areas of resolutions	Agree	Agree
		Boys	Girls
	Academic areas		
1.	Resolutions related to school	87.03%	89.5%
2.	Resolution related to teachers	89.16%	89%
3.	Resolution related to self in academic fields	98.3%	98.3%
	Non academic areas		
1.	Resolution related to parents	97.38%	95.71%
2.	Resolution related to peer	88.66%	93%
3.	Resolution related to self in non academic area	77.59%	91.85%

The percentage distribution in table-2 clearly shows that majority of subjects agreed with the resolutions related to academic and non academic areas.

In academic areas, most of the subjects were in favour of resolutio related to schools. They agreed that the school culture should be mo compatible, according to one's background. As it facilitates them to better adju in their school environment.

Good adjustment makes the children proud and self satisfied, motivat them for further success, encourages them to be an independent thinker ar builds their confidence (Hurlock, 1972).

Majority of the students agreed that the school curriculum should b planned in such a manner, that it could provide vocational training areas opportunities to the rural students.

Most of the boys and girls realized the need for guidance and counse in the field of education. As in the rural areas, the children don't get any academic assistance at home because parents are mostly illiterate. At such times necessary arrangement should be made in the school settings so that pr guidance and counselling could be given to them and to help them in academ areas. Most of the subjects were in favour of resolutions related to teachers They also agreed that the teachers should be patient and approachable in the attitude.

The academic environment of a school, which consists of qualifie teachers, good and healthy interaction between teachers and students, ha positive relationship with the achievement of the rural students (Subramanyam 1984). Teachers must help to develop positive attitude in children durin schooling. They must also help in development to self discipline, self confidenc and encourage the children to actively participate in school activities (Atkinso and Green 1990).

Majority of subjects showed positive response in self related aspects. They wanted to concentrate on their studies and to develop the habit of revising thei class work at home.

In nonacademic areas most of the subjects showed positive response towards resolutions related to parental aspects. Subjects expected that their parents should understand and co-operate with them. They also need freedom and parents should have less interference in their activities. Moreover subjects also expected that there should be no communication gap between children and parents. As most of the parents of the rural children were illiterate, conservative in nature and rigid in exercising their customs and traditions, so they hardly discuss any sort of matters with their children.

Family environment has its impact of child's competence, cohesiveness and expressiveness. Well organized rural families that are oriented towards active recreational activities have been positively related to children's self concept and self esteem (Sears, 1970).

The specific resolutions related to peers in non-academic areas further picts prominently that subjects like to work co-operatively with peers. In self ated aspects most of the subjects were agreed that they lack of confidence in ir conversation. So they want to improve their fluency in conversation and cabulary.

CONCLUSION

It can be concluded from the results that girls experienced more problems n boys in parent, school and self related aspects. The major resolutions which subjects perceived as resolving their problems were related to self and rent related aspects.

REFERENCES

Atkinson & Green (1995) Cooperative learning : The teachers role, Journal of education for childhood. International, Wheaton, 67, 8.

Hurlock, E.B. (1972) Personality development, New York, Mc. Graw Hill Book Company.

Jersiled, A. T. (1990) Peer relationship in later childhood child—Psychology, Prentice Hall, Inc.

Sears, R. R. (1970) Relation of early socialization experience to self concept and gender role in middle childhood. Child development, 41, 267-289.

Sharma, D. & Gir, S. (2000) A study on the problems experienced and resolutions perceived by girls in late childhood period. Unpublished M.Sc. Thesis, College of Home Science, Udaipur.

Subrahmanyam, S. (1984) Academic adjustment and scholastic attainment of secondary school children. Journal of education research extension 23, 159-169.

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Published By :

Agra Psychological Research Cell

Tiwari Kothi, Belanganj, Agra-282004

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Indian Psychological Review
Vol. 70, No. 4, Year 2008, Page 189-211

UTILIZING A "HARD SCIENCE" TYPE MODEL TO STUDY INTERACTIONS BETWEEN EMOTION AND COGNITION

Hunter Shirley*

The use of a "hard science" type of analog model is applied here in an effort to study how emotion and cognition interact. In the so-called "hard sciences," it has been found that detailed, completely specified models that attempt to replicate the functional processes of highly complex natural phenomena, can produce insights that can be gained in no other way. Schematic representations of this kind, such as meteorologists use to model the weather, require the positioning inside schematic representations in diagrammatic form of diverse sets of variables interlinked within the model in ways that seem to replicate the functional processes involved. In this paper a richly diverse set of cognitive and emotional states are delineated in two "hard science" type models, with efforts made to trace parallel functions in each system.

Like members of other so-called "soft sciences," psychologists are fond of calling their theories by a newly fashionable label, grandly referring to their theories as models. Yet in the so-called "hard sciences," discursive verbal theories do not rate the label models.

"Hard Science" Models

The International Encyclopedia of Science defines models and modeling as follows : "In experimental science, the technique of reproducing the behavior of a physical system on convenient laboratory scale" (1963, p. 792).

Meteorologists, engineers, computer analysts, geologists, biologists, architects, chemists, and physicists apply the term model to scientific efforts to replicate the interaction of components of systems, be they natural processes like a weather system or be they the replication of functions or structures of machines, buildings, or economic systems. Proportions, order, relationship of

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components, and interaction of components are carefully specified articulated in models used by the so-called hard sciences.

This specification and articulation of the interaction of compo constitutes attempts to replicate the structure and functions of systems processes. Representation of interaction of components within system achieve proportionality mathematically or diagrammatically. Diagram models most often take the form of flow charts, circuit diagrams, comp matrices, etc.

A model becomes a *realization* of a complex process, if the behavior model closely replicates the behavior of the complex process, the pr said to be *satisfied* by the model. Indeed, it appears that the time ma come for psychology to begin to utilize hard science type models. Osch Lieberman (2001) in a recent paper in *American Psychologist*, wrote that so psychologists and cognitive neuroscientist .... tend to ask different sorts research questions; practicioners of both disciplines share a concern describing psychological processes in terms of information proces mechanisms (p. 717).

And, as everyone knows, the best way to delineate information proces is through hard science models.

The Physical Sciences Undergo A Mid-20th Century Paradigm Shift

We have long prided ourselves as a "hard science" since, like the phys sciences, we statistically vet all our tests and experiments. But when in the 20th century the physical sciences underwent a paradigm shift from haphaz experiments into everything of interest to experiments derived from ne designed analog models, we in psychology failed to join the paradigm shift. stuck to our old ways, clung to blind faith in statistical vetting obstinately hel our outmoded orthodoxies !

After Norbert Wiener (1948) and W. Ross Ashby (1954, 1956) taught al the sciences how to derive analog models from empirical "black b experiments, we naively failed to discern that this *stimulus induct* experimental technique was equivalent to ours we call *affect priming*. But continued to use affect priming experiments primarily in attribution proc research rather than using it to design analog models (see Murphy and Zajon 1993 paper on affect priming). So we utterly failed to join other sciences in th paradigm shift toward developing analog models of complex systems—and th deriving insights from such models to guide our research.

To my knowledge, no other psychologist joined physical scientists in t paradigm shift that produced analog models of everything from the structure the atom, the earth's crust, weather fronts, volcanic eruptions, black holes space, and the structure of DNA.

We watched with childish admiration, not realizing that all of this was imposing an obligation upon us to begin to model our own field of study, the human mind. W. Ross Ashby (1960) tried to show us how in his *Design for a Brain*. But his cybernetic explanations passed over the heads of most psychologists as scientific babble that doesn't apply to us.

As far as I know, I am apparently the only psychologist who joined the paradigm shift. I devoted four years of full time field studies performing some 2000 hours of *affect priming experiments* in an effort to derive data that could be organized into systems designs of mental states, processes, and functions. In this paper, I share with colleagues what I have derived from my efforts to learn how to use the data gained from field experiments to design schematics of the mind (see Shirley, 1995, 1996, 2000, 2003).

In following our course of reductionism we must conclude that, by trendy statistical vetting of tests and experiments, both clinicians, counselors, and personality researches not only careened down a blind alley, they totally missed the biggest scientific event of the 20th century—and in missing it, failed to participate in the enormous benefits it conveyed.

Other than the birth of the development of atomic energy and the birth of the internet, the most vastly significant scientific event of the century was the paradigm shift in science that occurred after cyberneticians provided guidance for designing analog models of complex systems that cannot be disassembled for study. And though both psychology and psychiatry had emulated the physical sciences by statistically vetting everything we did, all behavioral sciences simply missed the boat. We did nothing. We failed to seize the opportunity. We continued on in our blind alleys !

While every other science began to learn to use the cybernetic "black box" (stimulus induction) technique as a means of designing analog models, psychology and psychiatry continued attempting to understand and modify the workings of the human mind utilizing a pathetically tiny inadequate set of mental factors. And we continued to utilize the superb affect priming technique primarily in attribution process research instead of applying it to the task it was designed to perform, namely that of designing analog models of complex systems that cannot be disassembled for study.

Having been the only investigator to utilize affect priming experiments to achieve that goal, I thought in this paper I would explore what the new psychofeedback model of personality reveals about the interactions of cognition and emotion.

DESIGNING A "HARD SCIENCE" TYPE

Model of Cognitive and Emotional Functions and Processes

The first recorded effort to achieve "hard science" type models of the cognitive and emotional systems appeared in the literature in the 1970's and

1980's. The first "hard science" type model of the emotional system appeared the *Journal of Psychology* (Shirley, 1972) and included 75 normal emotions. variables were articulated in this schematic representation of how emotions te to interact with each other. Then in "Toward an Operable Simulation Model Personality" (Shirley, 1977, this model was expanded to include ambival emotions).

The conceptual aspects of these circuit diagrams of the emotional syst was further extended in "Emotion as a three Valued Variable" (Shirley, 1976) the author's pointing the way toward demonstrating through *Stimulus-Organism-Response Matrix* how the three values of emotions have profound effect on human cognition. This simple diagram clarifies how fac inhibition and facilitation affect evaluations within *personal* and social cont

Then in 1983 the first sophisticated, hard science model of cogni appeared in the publication of *Mapping the Mind* (Shirley, 1983). In this volume a detailed, articulated, diagrammatic model of human cognitive system was advanced (Shirley, 1983, pp. 264, 316-317) and a similarly designed model of the emotional system published earlier was included (Shirley, pp 214, 284, 290-293), with greater extension of the ambivalent emotions that elicit so much cognitive dissonance.

The above publication constitute the first effort to provide hard scienc type models of the two systems in the human mind which seem to contro decision making, planning, and motivation. Moreover, in the last third of *Mappin the Mind*, a thorough investigation was carried out concerning the fresh insight the existence of these two hard science models might offer in this realm s charged with mystery.

CONCEPTUAL ADVANCES TOWARD UNDERSTANDING HOW THE MIND'S CONTROL SYSTEMS INTERACT

Though old classics like Tolman (1952) and Schacter (1962) were ofte cited, significant advances have been made over the past two decades towar achieving better insights about the functional processes that cyberneticists woul call "human control signals." Duffy (1962), Wessman and Ricks (1966 established moods as equivalent to activation levels of energy within th organism; Plutchik (1980), Fridja (1986), Bertocci (1988) and Cornelius (1996 advanced interesting fresh insights into functional aspects of emotion; Adjer (1988) did so with attitudes; Ashercraft (1989), Valman's (1991), Andersor (1990), and Eysenck (1993) modified our ideas about cognition; Mischel and Shoda (1995), Dickman (1990), Benjafield (1997), Dalgleish *et. al.*, (1997) conducted interesting studies of impulsivity.

Yet from among all these excellent studies, very limited efforts were made to explore how different systems comprising the mind interact with each other and affect each other. More recently, in his book *How the Mind Works* (1997), Pinker did, however, make many interesting suggestions concerning the dynamic nteractions about the various control systems and how they seem to interact. Yet his focus was somewhat vague and generalized. A more specific focus was achieved by Miranda and Persons in their paper, "Dysfunctional Attitudes are Mood-State Dependent" (1988) and (with Byers) their follow up paper, "Endorsement of Dysfunctional Beliefs Depends on Current Mood States" (1990).

These efforts, along with Mischel and Shoda's "The Cognitive-Affective System Theory of Personality" (1995) constituted constructive efforts to begin a more penetrating study of the interactional parameters of the mind's control systems. Indeed, a number of efforts have been made to explain why and how cognitive and emotional processes interact (see Kunda, 1990, Forgas, 1995, Rusting, 1998, Dalgleish and Power, 1999). Yet a much more thorough and comprehensive study of such systemic interaction becomes possible when a schematic representation in diagrammatic form is available of each system, providing a much more graphic means of exploring interrelationship patterns.

THE USES OF HARD SCIENCE TYPE MODELS

This paper is perforce too brief to review the findings of the "interactionists," if we may call them that. In this paper we will focus on some of the interactions between cognition and emotion that were suggested by the advent within the behavioral sciences of the series of schematic representations in diagrammatic form of various human control systems which may perhaps justify being labeled the first analog model of the mind.

But before initiating such an exploration, an important issue must be addressed. This issue is as follows : "What values do hard science type models offer toward a better understanding of the complex systems being modeled ?"

As famed cyberneticist W. Ross Ashby observed a half century ago, "science today is taking the first steps towards studying complexity in its own right" (1958, p. 5). He notes that "complex systems do not allow the varying of only one factor at a time—they are so dynamic and interconnected that the alternation of one factor immediately acts as cause to evoke alterations in others" (1956, p. 5).

Factor analysts have long operated under the apparently false assumption that most natural language names in most languages have been coined for mental states and processes than actually exist. They have long tried, through statistical manipulation, to uncover and identify the essential or basic states—and thereby banish all redundant or superfluous or misleading labels from professional use.

But exactly the contrary of the factor analysts' assumption seems to be true. The human mind seems to be so vastly complex that our control system includes even more states, functions and processes than we have been able t name. Yet we must somehow deal with this complexity, not ignore it.

Hence, seized as the behavioral sciences have been over our century lon thrust of reductionism, no psychologist until recently has dared proffer any serie of complex replicas or analog models of any of the subsystems of mind. An without homomorphic models of the various subsystems of the human contr system, we are prevented from launching any thorough study of the compl interactions of subsystems within the mind (see *Living Control Systems,* Baylis 1966).

Shirley's announcement in 1972 that he had completed a very thoroug modeling of all of the major subsystems of mind aroused very little interes among psychologists, accustomed as they were to trying to reduce the variables of mind to their smallest manageable quotient set. His proffering of a circuit diagram of 75 normal emotions struck those who bothered to investigate as profligate, to say the least. What in the world could one do with a model composed of 75 variables ?

Yet highly complex models are typical—indeed run-of-the-mill—among "hard" scientists. All efforts to model complex *machines* (and the human mind may be the most complex electro-chemical *machine in the universe*) requires the utilization of many components—variables, states, functions, processes—to arrive at an approximate or homomorphic representation of such complex machines.

An engineering type model is useful only if its components and functions are comprehensive enough to replicate nearly all of the behavior capabilities of the machines being modeled. Needless to say, the same constraint applies, as Klir and Valach (1967) pointed out, to any effort to model functional characteristics of the human mind. As Ashby puts it in his *Design for a Brain,*

> As a working guide, the scientist for some centuries has followed the hypothesis that, given a set of variables, he can always find a larger set. . . . Much research consists of trying to identify such a larger set, for when the set is too small, important variables will be left out of account, and the behavior of the set will be capricious. (1960, p. 28).

As meteorologists long ago discovered, once the model of the vast number of interacting factors is comprehensive enough, much information and many insights may be gleaned by manipulating the variables, states, and components of the model.

EXAMINING THE INTERACTION OF COGNITIVE AND EMOTION VARIABLES

Utilizing the two circuit designs of cognition and emotion from Shirley's analog model of the mind, then, let's examine how emotion may influence, alter, modify, and change cognition as the variables from the two systems interact.

In his flow chart representing the eight essential subsystems of the human control system first advanced in "Toward An Operable Simulation Model of Personality" (1977, p. 157), Shirley structures cognition above emotion (see Figure 1).

THE HUMAN CONTROL SYSTEM

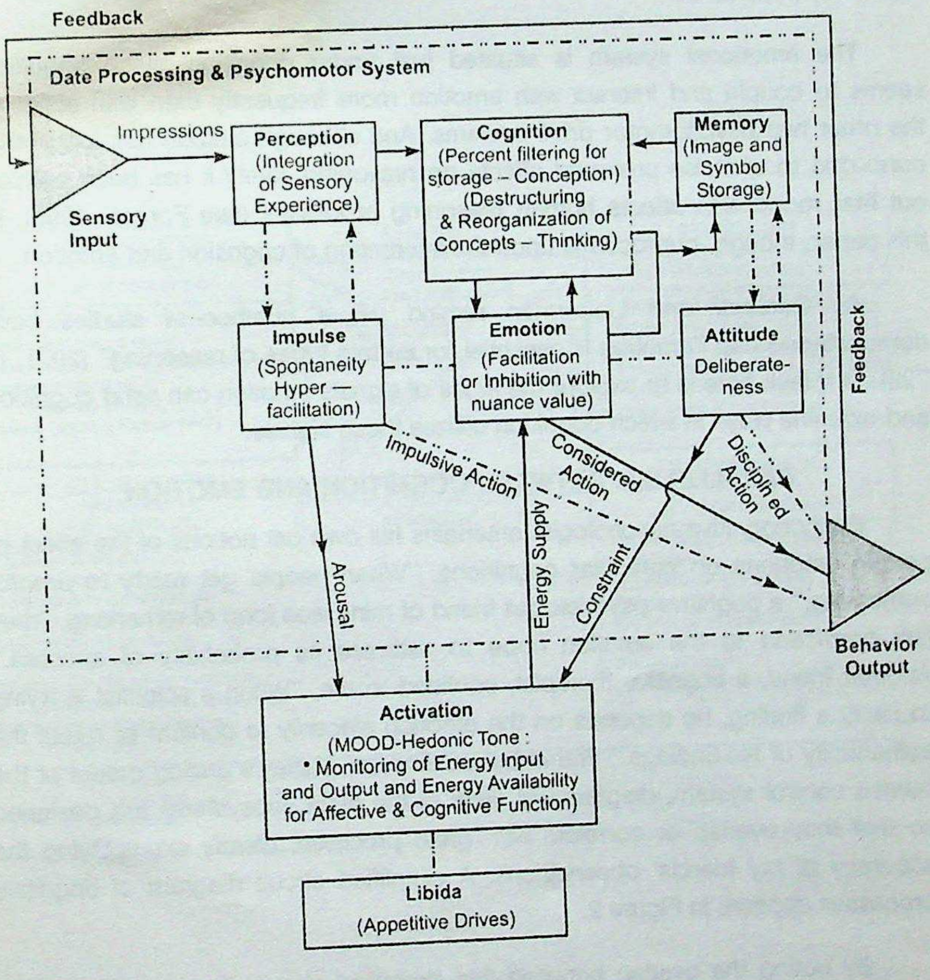

Feedback
Date Processing & Psychomotor System
Impressions
Sensory Input
Perception (Integration of Sensory Experience)
Cognition (Percent filtering for storage – Conception) (Destructuring & Reorganization of Concepts – Thinking)
Memory (Image and Symbol Storage)
Impulse (Spontaneity Hyper — facilitation)
Emotion (Facilitation or Inhibition with nuance value)
Attitude Deliberate-ness
Feedback
Impulsive Action
Considered Action
Disciplined Action
Arousal
Energy Supply
Constraint
Behavior Output
Activation (MOOD-Hedonic Tone : • Monitoring of Energy Input and Output and Energy Availability for Affective & Cognitive Function)
Libida (Appetitive Drives)

Fig. 1

He suggested that cognition and emotion first interact, then as the two decision-making systems interact, refer to memory for more information. As we note in this design, the three generalized kinds of behavior occur when *perception* couples with *impulse* (eliciting impulsive behavior), *memory* couples with *attitude* (eliciting disciplined behavior), and when *cognition* couples with *emotion* (eliciting considered behavior). Volition apparently consists of a coupling of any one of the three top data processing systems with any one of the three psychomotor drive systems. Volition then selects goals and implements motivational behavior.

The emotional system is situated just under cognition, since cognition seems to couple and interact with emotion more frequently than with either of the other two psychomotor drive systems. And although attitude has long been conceded to exercise profound effects on reasoning, lately it has been pointed out that mood also affects human reasoning processes (see Forgas, 1995). In this paper, though, our focus is upon the interaction of cognition and emotion.

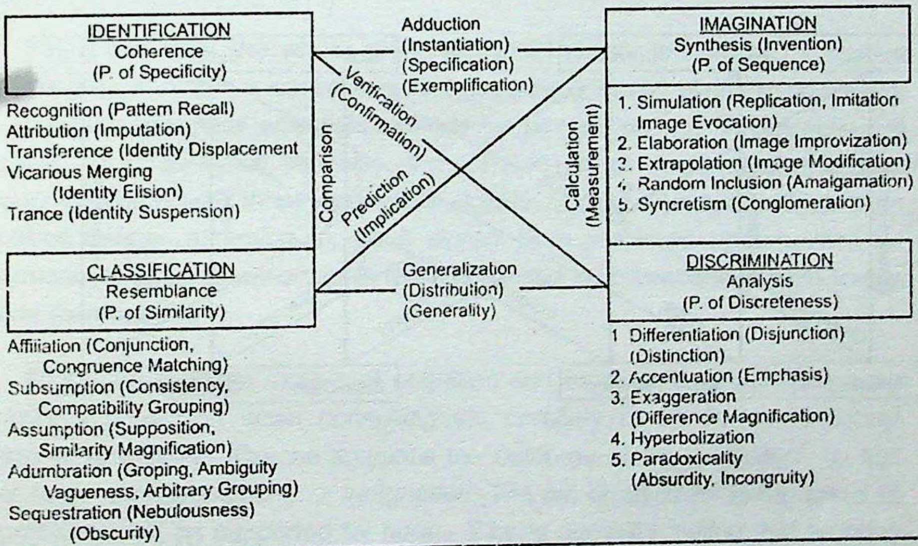
As Oschner and Lieberman remind us, a number of studies have demonstrated that "emotion is essential for certain types of reasoning" (2001, p. 725). Our task here is to explore the kinds of signals emotion can send cognition and examine ways in which cognition utilizes these signals.

PARALLELISM BETWEEN COGNITION AND EMOTION

Every cognitive psychologist entertains his own pet notions of the effect of certain emotions on particular cognitions. "When people get ready to *predict* something," a cognitive psychologist friend of mine was fond of remarking, "they link *prediction* to the emotion *hope* to estimate its probability of success." Another friend, a cognitive therapist, confided to me, "When a scientist is trying to *verify* a finding, he depends on the emotion *sincerity to confirm* or reject the authenticity of his findings." Within the confines of Shirley's analog model of the human control system, diagrams of each of the eight subsystems are designed so that they overlap or correlate with great precision, clearly exemplifying the accuracy of my friends' observations. A simplified circuit diagram of cognitive processes appears in Figure 2.

By noting the overlap between this simplified circuit diagram of cognitive functions with the simplified diagram of emotional functions found in Figure 3, the reader can promptly perceive which emotions are utilized by which cognitions as the cognitive system proceeds in information processing, problem solving, decision making, and motivational choices.

Cognitive Processes (Cognitive System) (Programming + Dara Prcessing System : thought processes which filter, sift, & select perceptual material and order its commitment to memory using past memory stores & conceptual adjustment mechanisms as criteria and reference frames. The Conceptual Adjstment Mechanisms provide the means of destructuring percepts & concepts in order to restructure them for solving problems and adjsting to change and stress.)


IDENTIFICATION
Coherence
(P. of Specificity)
Recognition (Pattern Recall)
Attribution (Imputation)
Transference (Identity Displacement
Vicarious Merging
(Identity Elision)
Trance (Identity Suspension)
CLASSIFICATION
Resemblance
(P. of Similarity)
Affiliation (Conjunction,
Congruence Matching)
Subsumption (Consistency,
Compatibility Grouping)
Assumption (Supposition,
Similarity Magnification)
Adumbration (Groping, Ambiguity
Vagueness, Arbitrary Grouping)
Sequestration (Nebulousness)
(Obscurity)
Adduction
(Instantiation)
(Specification)
(Exemplification)
Verification
(Confirmation)
Comparison
Prediction
(Implication)
Generalization
(Distribution)
(Generality)
Calculation
(Measurement)
IMAGINATION
Synthesis (Invention)
(P. of Sequence)
1. Simulation (Replication, Imitation
Image Evocation)
2. Elaboration (Image Improvization)
3. Extrapolation (Image Modification)
4. Random Inclusion (Amalgamation)
5. Syncretism (Conglomeration)
DISCRIMINATION
Analysis
(P. of Discreteness)
1. Differentiation (Disjunction)
(Distinction)
2. Accentuation (Emphasis)
3. Exaggeration
(Difference Magnification)
4. Hyperbolization
5. Paradoxicality
(Absurdity, Incongruity)

Adduction	+	Generalization	=	Induction	or	Deduction
Comparison	+	Calculation	=	Evaluation	or	Formulation
Verification	+	Prediction	=	Validation (Substantiation)	or	Hypothesis (Theory)

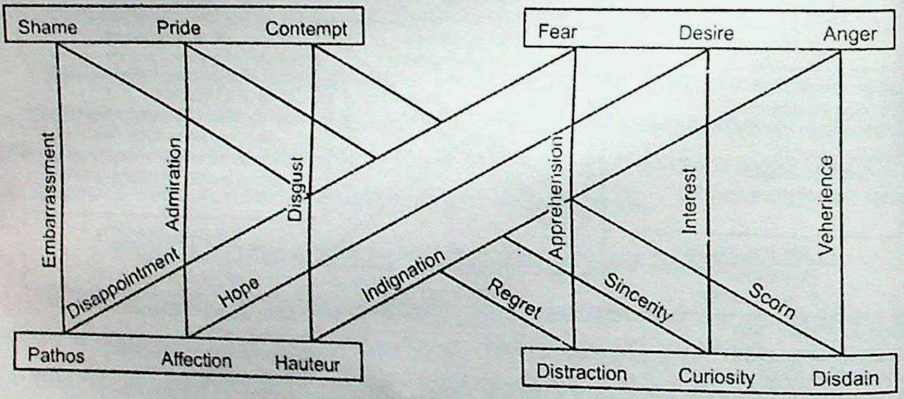
NORMAL EMOTIONS

(Simplified Curcuit Diagram)

Contempt ---------------------------- Antagonism --------------------- Anger

Pride ---------------------------------- Determination ------------------- Desire

Shame ------------------------------- Dread ------------------------------ Fear


Shame
Pride
Contempt
Fear
Desire
Anger
Embarrassment
Admiration
Disgust
Apprehension
Interest
Veherience
Disappointment
Hope
Indignation
Regret
Sincerity
Scorn
Pathos
Affection
Hauteur
Distraction
Curiosity
Disdain

Hauteur ------------------------------ Suspicion ----------------------- Desdain

Affection --------------------------- Relief ----------------------------- Curiosity

Pathos -------------------------------- Consternation ----------------- Distraction.

4 Basic Aggressivities Equal Strength = HATE

4 Basic Attractions Equal Strength = LOVE

4 Basic Anxieties Equal Strength = GRIEF

As we note, the circuits in the emotional system parallel to those in the cognitive system intimately influence their cognitive counterparts. In examining these two diagrams, we see that *hope* does influence *prediction,* that *sincerity* does affect *verification,* that *interest* supports *calculations,* that the emotion *admiration* is utilized to determine the nuances of *comparison.*

We see further that the basic emotion *affection* is utilized in efforts at *classification,* that the basic emotion *curiosity* promotes accurate *discrimination,* that the basic emotion *desire* gives wings to *imagination* (wishful thinking ?), and that the basic emotion *pride* (self-respect) provides the impetus needed for discerning identities (*identification*).

Such parallel or corollary functions as cognition and emotion couple seem quite natural : indeed most of those listed above could probably have been named by friends of mine who specialize in this field. (Indeed, I may have unknowingly plagiarized a few !)

Yet if this were the whole story, we could simply line up top cognitive psychologists and take a consensus. But the analog model of the mind Shirley has provided behavioral scientists extends far beyond such a simple series of surmises. As three-valued variables, the components of the emotional system provide cognition with three multivalent signals : *anxious-retreat* feelings from perceived danger, *attraction-approach* signals from perceived opportunities for enjoyment, or *aggressivity-struggle* feelings elicited by provocations from forces weaker than oneself.

According to these models of cognition and emotion, a person preparing to make a *prediction* when consulting the corollary circuit in his emotional system is very likely—after he imagines the outcome of his prediction—to feel either *hope, disappointment,* or *indignation.* The act of envisioning the result of his prediction will be supported by *hope*—if he is currently feeling that emotion or if prospects of success seem to prompt hope. Or he will feel *disappointment* or *indignation* if currently experiencing one of those two emotions, or if the poor prospects of success of his prediction prompts one or another of these two emotions.

THE USES AND ABUSES OF ANALOG MODELS

Engineering, electronic, hard science type models are designed to replicate complex systems or machines as closely as the designer can manage. Such models can never be evaluated by normal evaluation tests of validity or reliability. Such diagrammatic or mathematical models are tentative and with modifications improve over time with use. Such models are judged according to "best fit" characteristics. The scientist manipulating the analog model of the mind in a attempt to better understand cognitive-emotional interactions does not ask, "Are the variables of this circuit accurate ? Are they valid ? Will they always work reliably when I wish to use them in my work ?"

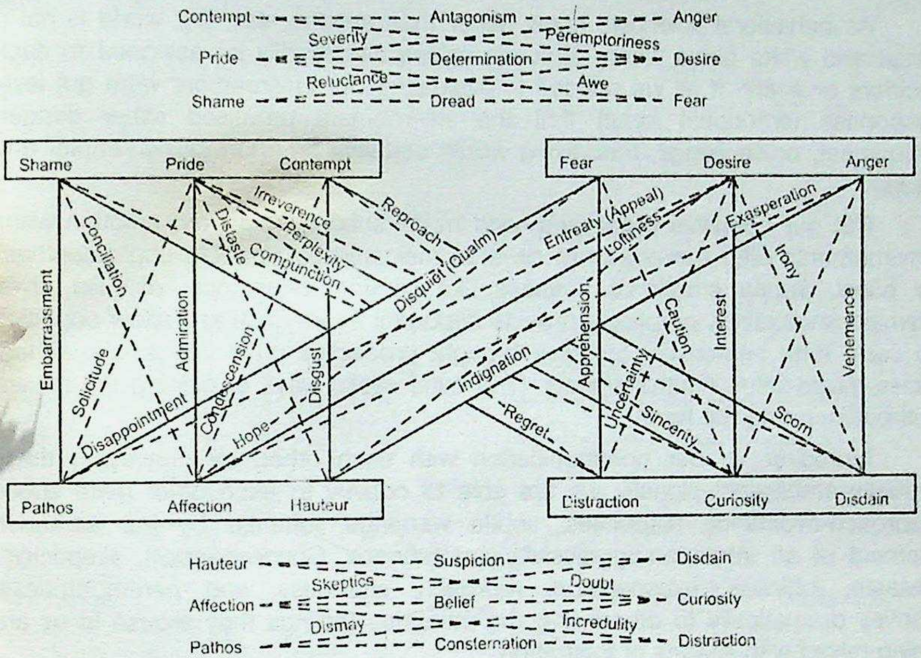
Instead the investigator using a hard science type model asks, "Does this model replicate the system it is representing better than do other existing models? Is the model being assessed more useful than other existing models ? Is it more comprehensive, more completely portraying the machine, system, or natura phenomena than other existing models ? Does it provide the researcher more insights and more valuable information ? Could, for example, the eight component model of the emotional system with its sixteen compound emotion of Robert Plutchik (1980) serve better to illustrate cognitive-emotional interaction than Shirley's analog model ? Or can the Galen-Wundt theory of personality structure as advanced by Eysenck (1970) better elucidate cognitive-emotion interaction than Shirley's analog model ? Or do the ten opposing affects in Cos and McCrae's renowned *Five Factor Model of Personality* (1992) provide a bette guide for such a task ?" These are the kinds of questions one must pose i evaluating Shirley's analog model of the mind. Thus a professional aware of th procedures to use evaluates the usefulness and value of a hard science typ model by examining its usefulness and comprehensiveness and then b comparing it to other models of the same kind.

In laymen's terms, emotions are animals' and humans' gut level response to their immediate environments. Let's examine this issue utilizing the term *anxiety, attraction,* and *aggressivity* as generalized affective categories rathe than as generalized traits. Any perception (conscious or uconscious) that th environment is threatening one with unpleasantness, stress, harm, or dange prompts *anxiety* emotions. Anxieties like fear, shame, disappointment, regre dread force cognition to be careful and prudent in its planning an decision-making. *Aggressivities* like anger, contempt, scorn, disgust, indignatio force cognition to gear up for a struggle for self-protection or to overcom obstacles and gain desired goals (see the STIMULUS-ORGANISM-RESPONS MATRIX, Shirley, 1976, p. 728).

NUANCE VALUES PROVIDED BY THE ANALOG MODEL OF THE MIND

In examining how Shirley's analog model of the emotional system ca prove helpful in studying the effects of emotion on cognition, a better insight i gained when applying the composite circuit diagram of all 75 normal emotion (see Figure 4).

NORMAL EMOTIONS
(Directional Forces, Motivation)


Contempt
Antagonism
Anger
Severity
Peremptoriness
Pride
Determination
Desire
Reluctance
Awe
Shame
Dread
Fear
Shame
Pride
Contempt
Fear
Desire
Anger
Embarrassment
Conciliation
Solicitude
Admiration
Irreverence
Perplexity
Distaste
Compunction
Reproach
Condescension
Disgust
Disquiet (Qualm)
Entreaty (Appeal)
Loftiness
Exasperation
Irony
Apprehension
Caution
Interest
Vehemence
Disappointment
Hope
Indignation
Regret
Uncertainty
Sincerity
Scorn
Pathos
Affection
Hauteur
Distraction
Curiosity
Disdain
Hauteur
Suspicion
Disdain
Skeptics
Doubt
Affection
Belief
Curiosity
Dismay
Incredulity
Pathos
Consternation
Distraction

Antagonism + Suspicion = Animosity or Hostility
Determination + Belief = Loyalty or Faith (Trust)
Dread + Consternation = Guilt or Disillusion

Vehemence + Disgust = Fanaticism or Abhorrence (Detestation)
Interest + Admiration = Dedication or Esteem (Adoration)
Apprehension + Embarrassment = Worry or Humiliation

Indignation + Scorn = Acrimony or Sarcasm
Hope + Sincerity = Confidence or Nobility (Rectitude)
Disappointment + Regret = Discouragement or Remorse

4 Basic Aggressivities Equal Strength = HATE
4 Basic Attractions Equal Strength = LOVE
4 Basic Anxieties Equal Strength = GRIEF

Here we encounter for the first time the superb nuance values of partially ambivalent emotions. These compound attraction-anxieties and attraction-aggressivities provide cognition invaluable information absolutely crucial to informed decision-making.

As behavioral scientists know better than anyone else, our world is not a black and white place where absolute values can readily be assigned to each incident or event. If all we needed in evaluating our environment were gut level responses (emotional input) that the environment promised either danger, enjoyment, or challenge, then living would certainly be enormously simpler and easier.

But our cognitive processes need much subtler input from emotion whe environments offer the organism rewards mitigated by possible unpleasantness or harm. Subtle emotional nuances like caution, reluctance, disquiet, awe, dismay, uncertainty, perplexity provide important information and allow cognition to carry forth immensely complex thought processes quite impossible with these mixed-value control signals. (The mind seeks ways of gaining the rewa without incurring the harm).

Moreover, in our communication with each other, by conveying thes partially ambivalent signals, we are able to convey to each other quite sub approach-avoidance responses, subtle warnings softened by the attractio element of an attraction-aggressivity ambivalence. Condescension, skepticis distaste, loftiness, exasperation, reproach, sternness, and peremptorines convey dramatically to others that the attraction feelings they arouse in us ar being mixed with shades of frustration.

COGNITIVE DISSONANCE

A half century ago Leon Festinger (1957) provided us an intriguing set o causes for the kind of racket and mental turmoil that sometimes besets a overstressed cognitive system. Now, by utilizing an analog model to examin functional characteristics of the human mind, we encounter another enormou cause of cognitive dissonance. Though the world has long been aware tha conflicting emotions cause inner turmoil that disturbs our thought processes, no much has been done toward identifying the affective culprits.

Although the term ambivalence is most frequently employed in th Freudian sense of a blending of love and hate, the analog model suggests—a we saw in Figure 3—love and hate appear not to be opposites as Freud though : actually hate and grief are opposites; indeed hate is frustrated love and grief i anxious love.

True opposites in the realm of emotion are anxieties and aggressivities When a person receives in cognition two opposing emotional signals, one urgin *retreat* and the other urging *attack*, he is experiencing an ambivalent set o signals. When such emotional opposites couple into compound emotions as w find in Figure 5, inevitably, then, intense cognitive dissonance is induced Moreover, when ambivalences accompany attitude formation during perso perception, negative attitudes are inevitably formed. When conscious awarenes of attitude discrepancy is achieved, cognitive dissonance reduction requires a person to make certain efforts to achieve attitude change. To overcome prejudices formed during such moments, "effortful mental work is always necessary to achieve attitude change," according to findings by Lieberman, Oschner, Gilbert, and Schacter (2001).

Chart of Mixed, Conflicting or Ambivalent Emotions

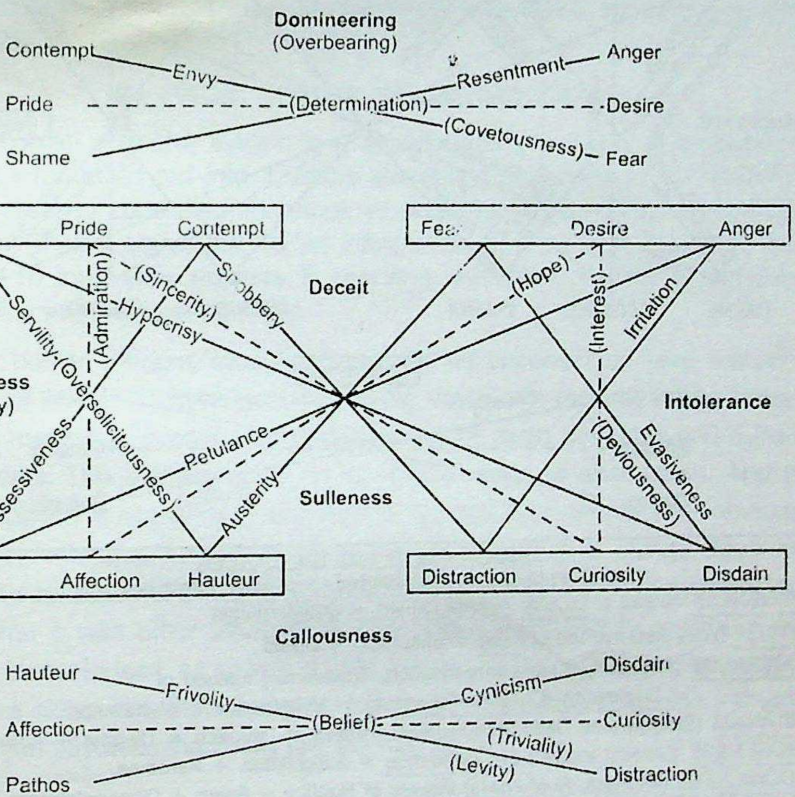

Domineering
(Overbearing)
Contempt
Envy
Pride
(Determination)
Shame
Resentment
Anger
Desire
(Covetousness)
Fear
Shame
Pride
Contempt
Fear
Desire
Anger
(Sincerity)
Hypocrisy
(Admiration)
Snobbery
Deceit
(Hope)
(Interest)
Irritation
Servility
(Oversolicitousness)
Officiousness
(Busybody)
Intolerance
Possessiveness
Petulance
Austerity
Sulleness
(Deviousness)
Evasiveness
Pathos
Affection
Hauteur
Distraction
Curiosity
Disdain
Callousness
Hauteur
Frivolity
Affection
(Belief)
Pathos
Cynicism
Disdain
Curiosity
(Triviality)
(Levity)
Distraction

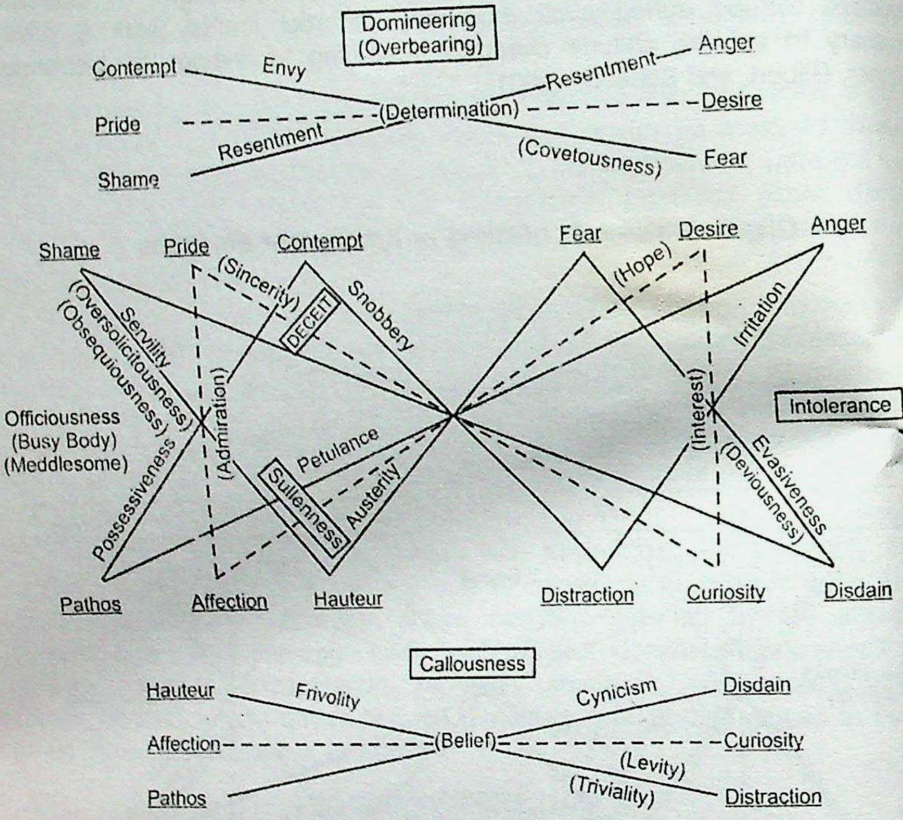
Fig. 5

The range of ambivalent emotions that humans are capable of experiencing is truly phenomenal. Carrying opposing messages as ambivalent emotions do actually provides cognition with invaluable data about the world outside of us, information that would be available in no other way. These conflicting signals permit humans to achieve a subtlety of reasoning not available to any other living species on earth.

Examine Figure 6 for a stunning glimpse of the vast array of ambivalences people are capable of experiencing.

AFFECTIVE AMBIVALENCE

MINOR EMOTIONAL IMBALANCES


Domineering
(Overbearing)
Contempt
Envy
Pride
Shame
Resentment
(Determination)
Resentment
Anger
Desire
(Covetousness)
Fear
Shame
Pride
Contempt
(Sincerity)
DECEIT
Snobbery
Servility
(Oversolicitousness)
(Obsequiousness)
Officiousness
(Busy Body)
(Meddlesome)
(Admiration)
Possessiveness
Petulance
Sullenness
Austerity
Pathos
Affection
Hauteur
Fear
Desire
Anger
(Hope)
Irritation
(Interest)
Intolerance
Evasiveness
(Deviousness)
Distraction
Curiosity
Disdain
Callousness
Hauteur
Frivolity
Affection
(Belief)
Pathos
Cynicism
Disdain
Curiosity
(Levity)
(Triviality)
Distraction

MAJOR EMOTIONAL IMBALANCES

(Global Ambivalences substituted for specific forms of Love)

ABUSIVENESS instead of Loyalty = Antagonism + Consternation
DISTRUST (Wariness) instead of Faith = Suspicion + Dread
BELIGERANCE (Pugnacity, Over-compensation, Truculence) instead of Dedication (Conscientiousness) = Vehemence + Humiliation
PURITANISM (Exaggerated Self-righteousness) instead of Devotion = Disgust + Apprehension
MOROSENESS (Gloom) instead of Confidence = Indignation + Remorse
SARDONICNESS (Wryness, Ruefulness) instead of Nobility = Scorn + Disappointment

MAJOR NEUROTIC IMBALANCES INTENSIFIED BY RAPID ALTERATION PATTERNS

Abusiveness + Distrust = RUTHLESSNESS
Puritanism + Beligerance = JEALOUSY
Moroseness + Sardonicness = AGGRIEVED (Sense of Martyrdom) (Disgruntled)

Paranoid Perversity
(Treachery, Inclination for Betrayal, Venom, Rancor

COMPOUND NEUROTIC OSCILLIATION PATTERNS

Domineering + Callousness = RUDENESS (Offensiveness)
Intolerance + Officiousness = BIGOTRY (Narrowmindedness)
Sullenness + Deceit = GREED (Avarice) (Grasping) (Rapacity) (Venality)

Paranoid Virulence
(Volatility, Explosiveness, Pro-vocation, Chronic Decompensation

Yet we pay a price for the enormous array of ambivalences we are capable of experiencing. People who experience ambivalent emotions too frequently tend to become passive-aggressive or antisocial or paranoid personalities. They become chronically disgruntled, feel endlessly tormented and frustrated, become convinced that the world is out to get them. Scientists at the American Institute of Applied Behavior Research estimate that 75% of the criminal acts that are committed throughout the world are prompted—either directly or indirectly—by people whose judgment has been distorted by the chronic experience of ambivalent emotions. A detailed study of the effects of ambivalent emotion upon cognitive thought processes may be examined in Shirley's *Mapping the Mind,* (pp. 261-328).

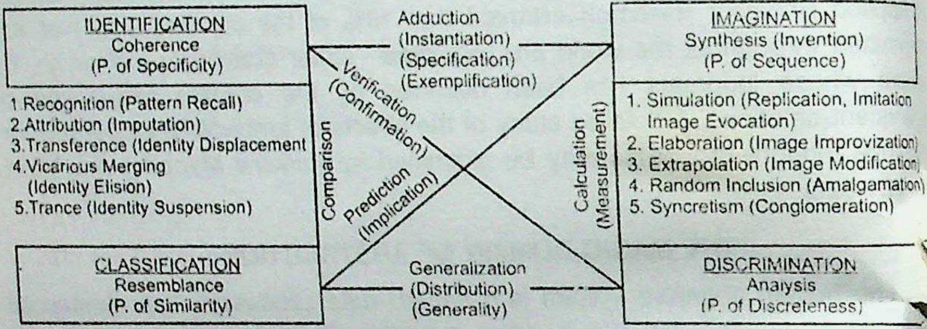
THE MAGIC DOMAIN OF ABSTRACTION

The human cognitive system is a superb data processor. It evaluates all perceptual information fed into it, refers everything important to the emotional system in order to code the information as potentially threatening, rewarding or challenging. Then it stores this coded information in short term memory, to be transferred to long term memory if cognitive evaluation deems it sufficiently important to remember permanently.

Most human thought, though, goes on at an unconscious level. Indeed, a great deal of human thought involves tearing down and reconstructing images, ideas, and memories. Humans are endlessly tearing apart concepts and building new concepts. This process goes on at various levels of abstraction. And the word abstraction is apparently used due to the fact that people very obviously remove their attention from their present surroundings and plunge deep into unconscious recesses of their minds as they draw information from memory, sort it and merge it with other information, then use imagination to construct new images or ideas. Indeed, as people do this we can literally see them "space out" as they sink down into their thoughts. In conversation others typically remark : "Hey, are you daydreaming ? Are you still with us ?"

Analytic-rational thinking in humans frequently goes on at the conscious level, though we all are aware of how adept the unconscious mind is at solving problems while consciously thinking of other things—or even while sleeping. The unconscious levelof thought processing while deep in abstraction (or even asleep) consists of "abstract" thought, often classified as intuition (see Epstein *et. al.,* 1996). The descent into various levels of abstraction is displayed again in Figure 7 (see "Designing 'Hard Science' Type Models of Perception, Cognition, and Memory", Shirley, 2003). A few words of explanation are perhaps in order in clarifying how—according to the analog model we are using to study human thought and feeling—destructuring and restructuring of concepts seem to work.

Cognitive Processes (Cognitive System) (Programming + Dara Prcessing System : thought processes which filter, sift, & select perceptual material and orde its commitment to memory using past memory stores & conceptual adjustmen mechanisms as criteria and reference frames. The Conceptual Adjstmen Mechanisms provide the means of destructuring percepts & concepts in order to restructure them for solving problems and adjsting to change and stress.)


IDENTIFICATION
Coherence
(P. of Specificity)
1.Recognition (Pattern Recall)
2.Attribution (Imputation)
3.Transference (Identity Displacement
4.Vicarious Merging
(Identity Elision)
5.Trance (Identity Suspension)
Adduction
(Instantiation)
(Specification)
(Exemplification)
Verification
(Confirmation)
Comparison
Prediction
(Implication)
Calculation
(Measurement)
IMAGINATION
Synthesis (Invention)
(P. of Sequence)
1. Simulation (Replication, Imitation
Image Evocation)
2. Elaboration (Image Improvization)
3. Extrapolation (Image Modification)
4. Random Inclusion (Amalgamation)
5. Syncretism (Conglomeration)
CLASSIFICATION
Resemblance
(P. of Similarity)
Generalization
(Distribution)
(Generality)
DISCRIMINATION
Analysis
(P. of Discreteness)

1. Affiliation (Conjunction, Congruence Matching)
2. Subsumption (Consistency, Compatibility Grouping)
3. Assumption (Supposition, Similarity Magnification)
4. Adumbration (Groping, Ambiguity Vagueness, Arbitrary Grouping)
5. Sequestration (Nebulousness) (Obscurity)

1. Differentiation (Disjunction) (Distinction)
2. Accentuation (Emphasis)
3. Exaggeration (Difference Magnification)
4. Hyperbolization
5. Paradoxicality (Absurdity, Incongruity)

Adduction + Generalization = Induction or Deduction
Comparison + Calculation = Evaluation or Formulation
Verification + Prediction = Validation (Substantiation) or Hypothesis (Theory)

Identification + Imagination + Classification + Discrimination
= INTELLIEGNCE (Thought, Ideation, Conceptualizatio
Coherence + Synthesis + Refernece + Aalysis + JUDGMENT (Reality Testing)
(Evaluation, Reasoning, Conclusion, Decision : Goal choice arrived at by means o Data Processing and Recorganization, *i.e.*, Destructuring + Restructuring

Destructuring Levels of the Directive Process :

1. Recognition + Simulation + Affiliation + Differentiation = ADAPTATION
(Insight Orientation, Adjustment to Reality—Method of Goal Alternation, I.e Inventiveness of Displacemen
2. Attribution + Elaboration + Subsumption + Accentuation = COMPENSATION
(Selective Significance Attachment, Symptom : Suppleness, Flexibility)
3. Transference + Extrapolation + Assumption + Exaggeration = DELUSION
(Symptom : Deliberate Misinterpretaion of facts) (Rationalization)
4. Vicarious Merging + Random Inclusion + Adumbration + Hyperbolization = DISORIENTATIO
(Deranged or Inconguous Significance Attachment, Dereistic Thinking)
(Symptom : Recklessness, Intemperance, Negligence (SystD. = Incontinenc
5. Trance + Syncretism + Sequestration + Paradoxicality = DISSOCIATION
(Symptom : Erratic Conduct, Discontinuity of Affect)
(Systematic Dissociation = Cerebral Incompetence)

Destructuring Level Code :
1. Selectivity, 2. Modification
3. Transformation, 4. Distortion
5. Fragmentation

Benign Induction of Dissociation = HYPNOTISM
Involuntary Chronic Dissociation = DEREALIZATION

Each time people tear apart images, memories, ideas, concepts, and try to rebuild and substitute better ones for the old ones, they must—at least briefly—delude themselves that they have achieved an improvement. This temporary delusion, as we savour the fresh product of our creative thinking, is much like the voluntary "suspension of disbelief" a reader of fiction must exercise to lose himself in a story.

In the circuit diagram of the cognitive system displayed in Figure 7, we find the essential functions of each level of abstraction listed at the bottom. When all four of the first level coordinate, SELECTIVITY is achieved. At the second level, MODIFICATION of images, thoughts, ideas, and concepts is attained. At the third level, an actual TRANSFORMATION of them is achieved. At the fourth and fifth levels of abstraction, actual DISTORTION and finally complete FRAGMENTATION of images, ideas, and concepts is achieved so that a reconstruction via creative thinking can take place.

Beneath Figure 7, we also note the inclusion of typical psychopathological effects that appear to accrue when people spend too much time fixated in one or another level of abstraction.

CONCLUSION

As noted above, hard science type models—in contradistinction to the diagramless theoretic models we customarily advance in psychology—typically incorporate a wide range of variables, states, processes, and functions in their attempts to replicate the working of complex machines or complex natural phenomena. Meteorologists cannot wait for many decades of research to isolate and identify every process of terrestrial weather. They build models of weather processes as those processes appear to function from our present knowledge and understanding of them.

The parts of the analog model of the mind utilized here to study the effects of emotion on cognition is a similar type model. Exact couplings of emotions or thoughts and their precise products are presently unknown, and doubtless will always remain unknown. No amount of observation or experimentation are ever likely to reveal to us such precise information. Yet there is much we can learn through carefully designed experiments utilizing hard science models of cognition and emotion as guidelines. Employing this approach there are certain interactional correlates that we might identify with some confidence. This approach would involve using our present knowledge and understanding to design complex models capable of simulating these processes of the human mind. Such hard science type flow charts and circuit diagrams are susceptible to being downloaded into our computers and accessed whenever we wish to study or manipulate them or utilize them to simulate a wide array of mental activities.

Such schematic representations of cognitive processes also provide interesting guidelines for cognitive researchers. The models of cognition and emotion provided in this paper, for example, suggest that experiments might profitable be conducted by first establishing criterion values for detecting nonverbal signaling displays of target emotions.

Experimenters could then make efforts to determine whether subjects asked to make *predictions* seem to exhibit *hope* more frequently than other emotions. Is *sincerity* displayed most frequently when *verifications* of fact are attempted ? Do frequent nonverbal signals of admiration usually accompany *comparisons* ? Do *calculations* seem to elicit *interest* over other *emotions* ? Do subjects required to make *generalizations* seem to depend upon emotional belief to inform their formulations ? Are high level *curiosity* exhibited during efforts at *discrimination* ? During *classification* efforts, do people tend to like (have *affection* for) similarities, while distancing themselves from differences wi *hauteur* ? When someone does not *recognize* a person and begins pers perception *attribution*, do *shame, pride,* and *contempt* play critical roles ?

In this way over time a fairly reliable set of correlations might be achieve between specific emotional and cognitive interactions. Clearly, hard science type models can serve experimenters well . . . .

Nor are hard science type models rigid structures, inaccessible to modification. Behavioral scientists may change the labels on variables, states, processes, and functions within this model so that the model accommodates better their own knowledge and understanding of how the mind works.

Indeed, studying the processes and functions of the human mind through "hard science" type models appears likely to become of increasing importance over the decades to come.

REFERENCES

Ajzen, J. (1988) ***Attitudes, Personality, and Behavior.*** Stanford : Open University Press.

Anderson, J.P. (1990) ***Cognitive Psychology and Its Implications*** (3^{rd} Ed.) N. Y : Freeman and Co.

Ashby, W. Ross (1960) ***Design for a Brain.*** London : Chapman and Hall.

Ashby, W. Ross (1954) "The applications of cybernetics to psychiatry." ***Journal of Mental Science, 100,*** 114-124.

Ashby, W. Ross (1956) ***An Introduction to Cybernetics.*** London : Chapman and Hall.

Ashercraft, M.H. (1989) ***Human Memory and Cognition.*** Glenview, In : Scott Foreman.

Bayliss, L.E. (1966) ***Living Control Systems.*** San Francisco : W.H. Freeman.

Beck. A. ***Cognitive Approaches to Panic Disorder.*** In S. Rockman and J.D. Maser (Eds.) PANIC : Psychosomatic Perspective, Hillsdale N.J. Erlbaum.

Benjafield, John (1997) **Cognition** (2nd ed.) Upper Saddle Rock, N.J. : Prentice Hall.

Bertocci, P.A. (1988) ***The Person and the Primary Emotions.*** Berlin : Springer Verlag.

Carrol, John (1993) ***Human Cognitive Abilities.*** Cambridge University Press.

Cornelius, R.R. (1996) ***The Science of Emotion : Research and Tradition in the Psychology of Emotions.*** Upper Saddle River, N.J. : Prentice Hall.

Costa, P.T. & McCrae, R. (1992) ***Revised NEO Personality Inventory (NEO PI-R) and NEO Five-Factor Inventory (NEO-PPI) : Professional Manual.*** Odessa, Fl. : Psychological Assessment Resources.

Dalgleish, T. & Power, M. (1999) ***Handbook of Cognition and Emotion,*** Chichester, England : Wiley.

Dalgleish, T., Joseph, S., Trasher, S. & Yale, W. (1997) "Impulsivity and post traumatic stress disorder." ***Personality and Individual Differences, 22,*** 249-281.

Dickman, S.J. (1990) "Functional and dysfunctional impulsivity : personality and cognitive correlates." ***Journal of Personality and Social Psychology, 58,*** 95-102.

Duffy, E. (1962) ***Activation and Behavior,*** N.Y. : John Wiley.

Epstein, S., Pacini, R., Demes-Raj, W. & Heier, H. (1996) Individual differences in intuitive-experential and analytic-rational thinking style. ***Journal of Personality and Social Psychology, 71,*** 390-405.

Eysenck, Hans (1953) ***Structure of Human Personality.*** London : Methuen.

Eysenck, H.W. (1993) ***Principles of Cognitive Psychology.*** Lawrence Erlbaum.

Festinger, L. (1957) ***A Theory of Cognitive Dissonance.*** London : Tavistock.

Forgas, J. (1995) "Mood and judgment : the affect infusion model AIM." ***Psychological Bulletin, 117,*** 39-66.

Frijda, N. (1986) ***The Emotions.*** Cambridge University Press.

International Encyclopedia of Science (1965) London : Thomas Nelson and Sons.

Klir, Jiri & Valach, Miroslav (1967) ***Cybernetic Modelling.*** London : Iliffe Books.

Kunda, Z. (1990) "The case for motivated reasoning." ***Psychological Bulletin, 108,*** 480-498.

Lieberman, M., Gilbert, D., Shacter, D. (2001) "Attitude change in amnesia and under cognitive load." ***Psychological Science, 12,*** 135-140.

Miranda, J. & Persons, J.B. (1988) "Dysfunctional attitudes are mood-state dependent." ***Journal of Abnormal Psychology, 97,*** 76-79.

Miranda, J., Persons, J.B. & Byers, C.N. (1990) "Endorsement of dysfunctional beliefs depends on current mood state." ***Journal of Abnormal Psychology, 99,*** 237-241.

Mischel, W. & Shoda, Y. (1995) "A Cognitive-affective system theory of personality : Reconceptualizing situations, dispositions, dynamics, and invariance in personality structure." **Psychological Review, 102** (2) 246-268.

Murphy, S.T. & Zajonc, R.B. (1993) Affect, cognition, and awareness : Affective priming with optimal and suboptimal stimulus exposures. ***Journal of Personality*** and ***Social Psychology, 64,*** 723-739.

Oschner, K. & Lieberman, M. (2001) "The emergence of social cognitive neuroscience." ***American Psychologist.*** 717-734.

Pinker, S. (1997) ***How The Mind Works.*** N.Y. : W. W. Norton.

Plutchik, Robert (1980) ***Emotions : A Psycho-Evolutionary Synthesis.*** N.Y. : Harper and Row.

Rusting, C. (1998) Personality, moods, and cognitive processing of emotiona information : Three conceptual framework. ***Psychological Bulletin, 124,*** 165-196.

Shirley, H. (1972) Psychovector Analysis : A new discipline within the behavior sciences. ***Journal of Psychology, 80,*** 135-145.

Shirley, H. (1976) "Emotion as a three-valued variable." ***Psychological Reports, 39,*** 727-730.

Shirley, H. (1977) "Toward achieving an operable simulation model of personality." ***Journal of Psychology, 97,*** 151-168.

Shirley, H. (1983) ***Mapping The Mind.*** Chicago : Nelson-Hall.

Shirley, H. (1995) Psychofeedback Training : Developing Effective Interrelated Personality Scales. Paper presented to the Slovakian Academy of Science. Bratislava, Sept. 28.

Shirley, H. (1996) An Introduction to Psychofeedback Training. Paper presented to the ***Slovenian National Academy of the Art and Sciences,*** Oct. 19, 1996.

Shirley, H. (2000) The Uses of Psychofeedback Training in Psychiatry. An address delivered to the Palackeho University Medical School, Olomouc, Czech Rep. Oct. 5.

Shirley, H. (2003) Designing Hard Science Type Models of Perception, Cognition, an Memory. ***Theory and Science*** 4 : 2.

Shirley, H. (in press) Clinicians' Guide to Psychofeedback Training. 21st ***Centur Books.***

Schacter, S. (1962) "The interaction of cognitive and physiological determinants of emotional states." In P.H. Leiderman and D. Shapiro (Eds) ***Psychological Approaches to Social Behavior.*** Stanford : Stanford University Press.

Tolman, E.C. (1952) "A cognition motivation model." ***Psychological Review, 59,*** 389-400.

Valman, M. (1991) "Is human information processing conscious ?" ***Behavior and Brain Sciences, 14,*** pp. 651-726.

Wessman, A.E. & Ricks, D.F. (1966) ***Mood and Personality,*** N.Y. : Holt, Rhinehart, and Winston.

Yela, M. *et. al.* (1965) ***Les Modeles de la Personalite on Psychology.*** Paris : Presses Universitaires de France.

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Indian Psychological Review
Vol. 70, No. 4, Year 2008, Page 213-216

ACADEMIC ACHIEVEMENT AS RELATED TO ACHIEVEMENT MOTIVATION AND PARENTAL BACKGROUND

R.C. Pandey*

The purpose of the study was to see the relationship of academic achievement with achievement motivation and parental background of the students. The study was conducted on 92 Higher Secondary Students of Mizo Tribes, both male and female. Achievement motivation Scale by Beena Shah was used. Information blank for parental background and achievement scores from school record were made use of in the study.

It was found that there is a positive correlation between academic achievement and achievement motivation of Mizo students. Working of parent does show significant effect on academic achievement and achievement motivation. However, qualification of parents does not affect the academic achievement and achievement motivation of Mizo tribe students.

Academic achievement may be defined as the performance of the students in the subjects they study in the school. Students acquire knowledge and develop skills in the school environment, and become competent in subjects which they study during an academic session. Academic achievement determines the students' status in the class. The competence of students can be measured by test scores, and/or marks assigned by the teacher in the examination.

Academic achievement is directly related to students' growth and development of knowledge in educational situation where teaching-learning process takes place. Academic achievement depends on a number of variables like, students' interest and attitude towards the subjects of study, aptitude, intelligence, achievement motivation, socioeconomic status, locality of institution, sex, physical health etc.

A number of studies have been conducted by various researchers on the effect of achievement motivation, parental background etc. variables on academic achievement of high school and higher secondary level students. Desai (1971), Reddy and Basavanna (1978), Singh and Kaur (2003) found that there was positives relationship between academic achievement and achievement motivation. Sharma (1984), Lekhi and Kaur (1995), Pandey (2001) concluded that Parent–education, occupation and income affect the achievement motivation and academic achievement of the students.

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Such studies have not been conducted so far on Mizo Tribes of Mizoram, one of the backward states of India. So, the investigator initiated to conduct the study, particularly with Mizo higher secondary students.

Objectives

(i) To find out the relationship between students' academic achievement and achievement motivation.

(ii) To assess the effect of working of parents on students' academic achievement and achievement motivation.

(iii) To find out the effect of parents academic background on students' academic achievement and achievement motivation.

METHOD

Sample

The sample comprised of 92 higher secondary students (boys and girls) studying in XII class of four schools of Aizawl, the capital city of Mizoram. They were selected on the basis of random sampling technique. All students were Mizo Tribes of Mizoram.

Tools

(i) Achievement motivation scale (constructed and standardized by Beena Shah).

(ii) Self prepared information blank for parental background.

(iii) For achievement scores, the marks obtained by the students in the half-yearly examination from office record.

RESULTS AND DISCUSSION

To achieve the objectives of the present study, the data were analyzed and results are given in the following tables.

Table-1 : Coefficient of Correlation Between Academic Achievement and Achievement Motivation (N=92).

Variation	*r*	Significant Level
Academic Achievement	0.274	Significant at .01 Level
Achievement Motivation		

The observation of results in Table-1 shows Calculated value of *r* is .274, which is significant at .01 level. Thus, obtained results hold the opinion that academic achievement correlates significantly with achievement motivation of students. In others words, academic achievement and achievement motivation of Mizo Tribes Students are positively correlated with each other. This is corroborated by the findings of Desai (1971), Reddy and Basavanna (1978), Singh and Kaur (2003).

Table-2 : Means, S.D., and 't' Values for Students' Academic Achievement and Achievement Motivation with Parents Working.

Variables	Both Parents working (*N*=30)		One Parents working (*N*=37)		't' values
	Mean	S.D.	Mean	S.D.	
Academic Achievement	50.61	8.37	54.84	6.62	2.26*
Achievement Motivation	90.49	6.41	99.44	6.74	2.49*

Data depicted in Table-2 indicates the parent working does affect the students' academic achievement, as value of *'t'* is 2.26, which is significant at .05 level. It appears that the performance of one parent working group is better than both parents working group in academic achievement. Parent working is also affecting achievement motivation of students' as value of *'t'* is 2.49 which is significant at .05 level. It is evident from the result that one parent working group having better achievement motivation than both parents working group. The better academic achievement and achievement motivation of Mizo tribe students belonging to one parent-working group may be ascribed to the fact that either parent can help, support, and guide the students for their betterment, whereas both parents who are engaged in occupation may have insufficient time to do so.

Table-3 : Means, S.D. and *'t'* Values for Students' Academic Achievement and Achievement Motivation with Parental Education.

Variables	Parents Highly Qualified (Graduation and above) (*N* = 44)		Parents Less Qualified (Up to Higher Secondary) (*N*=48)		*'t'* values
	Mean	S.D.	Mean	S.D.	
Academic Achievement	51.31	8.28	52.77	7.78	.87NS
Achievement Motivation	92.68	6.85	91.97	7.18	.48NS

Above table reveals that academic achievement and achievement motivation of students are not affected by educational level of parents as the values of *'t'* respectively are .87 and .48, which are not significant at any level. It may be concluded that neither academic achievement nor achievement motivation of Mizo Tribe students is affected by the educational level of their parents.

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* Significant at .05 levels

REFERENCES

Desai, B.D. (1971) Achievement Motivation in High School Pupils Kaira District, N.C.E.R.T. Project. Vallabh Vidya Nagar, M.B. Patel College of Education.

Lekhi, V. & Kaur, G.P. (1995) Intelligence, Achievement motivation and study habit as correlates of Academic Achievement. ***The Educational Review, p.6.***

Pandey, K. (2001) Impact of availability of mother's academic help and their educational status on the achievement of pre-adolescent girls. ***Journal of Education and Psychology,*** Vol. 20, No.1.

Reddy, M.V.S. & Vasavanna, M. (1978) A study of self confidence and achievement. Motivation in relation to academic achievement. ***Indian Academy of Applied Psychology.***

Sharma, M.V. (1984) Academic achievement of school students vis-a-vis. Their parents education. ***Indian Journal of Psychology 59,*** 33.

Singh, Venita & Kaur, Amar Deep (2003) Achievement motivation and parental background as the determinants of students' academic achievement. ***The Educational Review,*** Vol.46,No.9,PP. 174-176.

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Indian Psychological Review
Vol. 70, No. 4, Year 2008, Page 217-224

PSYCHOPATHOLOGICAL CORRELATES OF SUICIDE IDEATION

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Many depressives have suicidal thought and sometimes make genuine attempts to take their own lives; moreover, it is generally believed that more than one half of those who try to kill themselves are depressed and despondent at the time of the act. A significant number of people who are not depressed, however, make suicidal attempts, some with success. The present investigation is an ex-post-facto correlational study designed to find out the suicide ideation in relation to extraversion, neuroticism and psychoticism the measures of personality, depression, hopelessness and stressful events and Psychopathology in Male School going adolescents. The sample consists of 200 male adolescents within the age range of 15 to 18 years (with a mean age 16.5 yrs.) studying in various Government Senior Secondary schools belonging to middle socio-economic status are selected through the multi-stage sampling. Suicidal ideation has non-significant positive correlation with the measures of paranoia (Pa), psychopathic deviation (Pp), schizophrenia (Sc), psychasthenia (As) and general psychosis (Ps). Stressful life events have the positive correlation with neuroticism and non-significant correlation with extroversion and psychoticism. Suicidal ideation has the positive and significant correlation with depression.

Emile Durkheim was the first sociologist who examines how social and cultural influence impact on the risk of suicide. He found that suicide rates in European countries differed in relation to various demographic and social factors, and concluded, "The suicide rate varies inversely with the integration of social groups of which the individual forms a part." Egoistic suicide is determined by a lack of meaningful family ties or social interactions. Anomic suicide occurs when the relationship between an individual and society is broken by social or economic adversity. For example, suicide rates rose during the Great depression of the 1930s and fell in nearly all-European countries during both world wars. Altruistic suicide results from excessive integration in society (e.g. hara-kiri, and sati).

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Many depressives have suicidal thought and sometimes make genuine attempts to take their own lives; moreover, it is generally believed that more than one half of those who try to kill themselves are depressed and despondent at the time of the act. A significant number of people who are not depressed, however, make suicidal attempts, some with success.

In a community survey of the Swedish elderly, Forell and Colleagues (1997) confirmed that depressive symptoms were the main determinant of suicidal thinking, even in those without depression. An older person's wish to die may increase the risk of death. An expressed wish to die was a predictor of mortality equal in magnitude to depression.

In general, compared with people who harm themselves and survie, those who commit suicide are more often male and are usually suffering from a psychiatric disorder. They often plan their suicidal acts carefully, take precautions against discovery, and use dangerous methods. By contrast, among those who harm themselves and survie, a large proportion carry out their acts impulsively in a way that invites discovery and is unlikely to be dangerous.

Family is a predominant source of influence on the adolescent's suicidal behavior. Lewinsohn and Colleagues (1994) followed a group of 1,500 high school students for 1 year and established that those adolescents who reported having attempted suicide also showed a significantly lower level of family support. Eighty-nine percent said they agreed with the statement that most people who attempt suicide are lonely or depressed. Eighty-five percent acknowledged that a suicide attempt is often essentially a "cry for help". In a Dutch cross-sectional study, those reporting suicide attempts had more disturbed relationships with their parents than adolescents who did not report attempts.

Several studies identify low self-esteem scores for adolescents who report having attempted suicide Rotheram-Borus *et. al.,* (1996). Low self-esteem is also a significant correlate of depression Allen, B.P. (1987). Depressed mood and depressive disorder are among the highest correlates of adolescent self-reported suicidal behavior.

It is painful hard to believe that young children can be so unhappy that they take their lives. Yet recent studies strongly suggest that many "accidents" among preschoolers may actually be deliberate attempts at suicide (Rosenthal and Rosenthal, 1984).

Although the vast majority of teenagers pass through adolescence without major psychological problems. Sometime these problems become so extreme that adolescents take their own lives. Current statistics show that a teenager commits suicide every ninety minutes a rate that has tripled over the last two decades. Males of all the ages commit suicide at a higher rate than females although females attempt suicide more often than males. Males are more successful in their efforts, primarily because they tend to use more violent methods.

It is not clear why suicide has increased so dramatically over the past few decades. Some psychologists suggest that the amount of stress teenagers experience has risen sharply in recent decades, provoking the most troubled to take their own lives (Elkind, 1981). In many studies it is reported that the exposure to model of suicidal behavior can be a risk factor for suicide behavior. Suicide behavior can be learn by imitation, especially among children, adolescents and adults Schmidtke and Hafner (1988). Suicide among adults often occurs in conjunction with depression or with defiliating physical illness. In absolute numbers more suicides occur among young white males (aged 15 to 34).

Aim

Objective of the present investigation is to find out the relationship among personality, Psychopathology and a suicide ideation in male adolescents.

Hypothesis

There shall be significant relationships among personality, Psychopathology and suicide ideation in male adolescents.

METHOD

The present investigation is an ex-post-facto correlational study designed to find out the suicide ideation in relation to extraversion, neuroticism and psychoticism the measures of personality, depression, hopelessness and stressful events and Psychopathology in Male School going adolescents.

Sample

The sample consists of 200 male adolescents within the age range of 15 to 18 years (with mean 16.5 years) studying in various Government Senior Secondary schools belonging to middle socio-economic status are selected through the multi-stage sampling. In first stage, a list of all districts of Haryana were prepared and four district were selected *i.e.* Kurukshetra, Ambala, Sonepat and Jhajjar using random sampling. In second stage, a list of all Govt. Senior Secondary Schools of four districts selected for the study were prepared and at least two schools were selected from each district.

Tools

The following tests were used in this study :

1. Scale for Suicide Ideation (Beck, Kovacs, Weissman, 1979)
2. (Beck Depression Inventory (Beck, Ward, Mendelson, Mock and Erbauge, 1961)
3. Eysenck Personality Questionnaire (Eysenck and Eysenck 1976a)
4. Hopelessness Scale (Beck, Weissman, Lester and Trexler, 1974)
5. Stressful life Events Scale (Singh, Kaur and Kaur, 1984)
6. Clinical Analysis Questionnaire (Part-II) (Cattell and Pebhees, 1971)

RESULTS

The data were processed to obtain the Pearson's Inter-correlation among Personality, Psychopathological Dimensions, stressful life Events and suicide Ideation variables used in the study were computed after ascertaining that the data fulfilled the main requirement underlying the use of Pearson. Inter-correlations

Table-1 : Intercorrelation Matrix of Personality, Psychopathological Dimensions, Stressful Life Events and Suicide Ideation.

Variable	H	E	N	P	SI	D	SLF	D1	D2	D3	D4	D5	D6	D7	Pa	Pp	Sc	As	Ps
Hopelessness (H)	—	-.20	.28	.25	.06	.19	.02	.22	.11	-.01	.21	.15	.11	24	.13	-16	.07	.03	.15
Extraversion (E)		—	-.31	-.12	.09	-.27	-09	-.35	-.24	.14	-.29	-.36	-.09	-.35	-.21	.20	-.06	-.08	-.28
Neuroticism (N)			—	.35	.02	.44	.19	.29	.20	-.08	.24	.29	.32	.23	.23	-.25	.30	.18	.29
Psychoticism (P)				—	.08	.16	.06	.28	.21	.09	.26	.34	.24	.28	.25	-.11	.37	.04	.26
Suicide Ideation (SI)					—	.32	.09	.09	.04	.05	.02	.05	.23	.01	.10	.01	.07	.02	.05
Depression (D)						—	.08	.23	.12	-.14	.14	.26	.27	.24	.19	-.18	.15	.14	.21
Stressful Life Events (SLE)							—	.11	.18	.08	.06	.17	.15	.10	.01	-.21	.07	-.06	.16
Hypochondriasis (D1)								—	.46	-.04	.43	.54	.30	.50	.46	-.32	.44	.24	.43
Zestfulness (D2)									—	-.07	.42	.45	.18	.45	.34	-.27	.43	.11	.43
Brooding Discontent (D3)										—	-.03	.02	.09	-.13	.03	.12	.05	.04	-.02
Anxious Depression (D4)											—	.41	.14	.55	.37	-24	.40	.16	.44
Euphoria (D5)												—	.34	.49	.42	-.36	.44	.29	.46
Guilt and Resentment (D6)													—	.11	.25	-.18	.29	.34	.31
Bored Depression (D7)														—	.49	-.28	.39	.19	.45
Paranoia (Pa)															—	-.10	.46	.28	.36
Psychopathitic Depression (Pp)																—	-.15	-.07	-.26
Schizophrenia (Sc)																	—	.29	.49
Psychasthenia (As)																		—	.19
General Psychosis (Ps)																			—

Correlation significance $P < .05 = .138$

Correlation significance $P < .01 = .181$

The findings of the present study are as under :

1. Extraversion neuroticism and psychoticism dimensions of personality Indexed by Eysenck Personality Questionnaire have shown low relationship with each other. Extraversion has significant negative correlation ($-.31, P < .01$) with neuroticism. The extraversion and psychoticism has negative non-significant correlation ($-.12, P > .05$). The neuroticism and psychoticism has the positive significant correlation ($.35, P < .01$). Thus the measures shared their common variances for male adolescents.

2. The measure of hopelessness correlated positively and significantly with the measures of neuroticism and psychoticism, whereas hopelessness correlated negative significant with the measure of extraversion. Thus the measure hopelessness shared its common variances with psychoticism and neuroticism for male adolescents.

3. In general the correlation between three dimensions of personality and factors of depression are ranging form $-.35$ to $.36$. Neuroticism shared its variances with some measures of depression D1, D2, D4, D5, D6, D7, and depression (BDI). Extraversion has been found to correlate negatively with D1 and depression (BDI) whereas positive correlation found with D3. The psychoticism shared its variances with some measures of depression D1, D2, D4, D5, D6, D7, and depression (BDI) for male adolescents.

4. Stressful life events have positive significant correlation with the measures of depression D2, D5 and D6 for male adolescents.

5. Stressful life events have very low non-significant correlation with hopelessness. Thus hopelessness and stressful life events are independent for male adolescents.

6. Stressful life events have the positive correlation with neuroticism and non-significant correlation with extraversion and psychoticism. Stressful life events stared its variances with neuroticism for male adolescents.

7. Suicidal ideation has the positive and significant correlation with depression.

8. Suicidal ideation has the non-significant correlation with neuroticism. Suicidal ideation and neuroticism are independent variables.

9. Suicidal ideation has non-significant correlation with psychoticism.

10. Suicidal ideation has non-significant correlation with extraversion. Suicidal ideation and extraversion are independent variables.

11. Suicidal ideation has non-significant positive correlation with stressful life events. Thus hypothesis V does not supported for male adolescents.
12. Suicidal ideation has non-significant positive correlation with the measures of paranoia (Pa), psychopathic deviation (Pp), Schizophrenia (Sc), psychasthenia (As) and general psychosis (Ps). The measure suicidal ideation do not shared itrs variances with these measures for male adolescents.

DISCUSSION

In the present investigation it was found that depression is a positive correlate of suicidal ideation in male adolescents. The positive correlation with suicidal ideation confirmed the finding of earlier studies (Beck, Lester and Albert, 1973; Weiss man, Beck and Kovacs 1979).

Hopelessness does not correlate with suicidal ideation in male adolescents. A review of earlier studies found that there is significant relationship between hopelessness and suicidal ideation (Cole, 1988; Emery, Steer and Beck, 1981; Minkoff, Bergman, Beck and Beck, 1973; Weissman, Beck and Kovacs, 1979; The results of present study do not confirm the earlier studies but the finding has similarity with study of Cole (1988), that suicidal ideation and hopelessness is uncorrelated in male adolescents. One main reason of insignificant correlation may be the sample as the adolescents are taken from non-clinic or school situation. The correlation between extraversion and suicidal ideation, between neuroticism and suicidal ideation and between psychoticism and suicide ideation in male adolescent is non significant. The finding of study is similar with the research finding of Irfani (1978). The inter-correlation between suicidal ideation and stressful life events is non-significant in case of male adolescents. The finding of study is similar of the research findings of Schotte and Clum (1982; 1987). In the present study it is also found that the suicidal ideation has non-significant relationship with general psychosis (Ps), Schizophrenia (Sc) and paranoia (Pa) in male adolescents. Hopelessness does not seem to be as critically related to suicidal behaviour for adolescents as to others (Cole 1989). Other cognitive factors may attenuate the offers of hopelessness in such adolescents. One such factor may be that external events such as leaving home or leaving school will produce substantive positive changes in the near future, leaving school could represent the termination of academic pressures or distressing peer relations a chance to start this. Similarly leavening home may signify release from parental control and an opportunity for greater independence. Such belief may serve as a cognitive buffer between hopelessness and suicide related behaviour. Such buffer may be the adolescents "personal fable" a common belief among adolescents thus they are special, unusually capable and fortunate individual and that accidents or catastrophes that could be fall others but not happen to them (Lester, D. 1998) the personal fable may serve as a buffer for suicidal thoughts or behavior and that failures to adopt fable or belief about oneself may increase one's susceptibility to suicidal contemplation.

The adolescents who are in depressive mood have the tendency to develop the suicidal ideas or suicidal thought. If the state of depressive mood goes for the long time the adolescents may attempt/commit suicide. Further it has been also found that the person who is neurotic or psychotic have the tendency to develop suicidal thoughts that leads towards suicide/attempted suicide.

REFERENCES

Allen, B.P. (1987) Youth suicide. Adolescence, 22(86), 271-290.

Andriolo K.R. (1998) Gender and culture construction of good and bad suicides. ***Suicide and Life-Threatening Behaviour, Vol. 28,*** 37-49.

Beck, A.T., Lester, D., & Albert, N. (1973) Suicidal wishes and symptoms of depression. ***Psychological Reports, 33,*** 770.

Brodsky (1997) Characteristics of borderline personality disorder associated with suicidal behaviour. ***American Journal of Psychiatry, 154(12),*** 1715-1719.

Cole, D.A. (1988) Hopelessness, social desirability, depression, and parasuicide in two college student samples. ***Journal of Consulting and Clinical Psychology, 56,*** 131-136.

Corder, B. (1974) A study of social and psychological characteristics of adolescent suicide attempters in an urban, disadvantaged area. ***Adolescence, 9,*** 1-6.

Elkind, D. (1981) The hurried child. Reading MA : Addison-Wesley.

Emery, G.D., Steer, R.A., & Beck, A.T. (1981) Depression, hopelessness and suicidal intent among heroin addicts. ***International Journal of the Addictions, 16,*** 425-429.

Forsell Y; Jorm, A.E. & Winblad, B. (1997) Suicidal thoughts and associated factors in an elderly population. ***Acta Psychiatrica Scandinavica, Vol. 95,*** 108-118.

Irfani, S. (1978) Personality correlates of suicidal tendency among Iranian and Turkish students. ***Journal of Psychology, 99(2),*** 151-153.

Lester, D. (1998) Helpessness, Hopelessness and suicidality. ***Psychological Reports, 82*** (3 Pt 1), 946.

Rosenthal, P.A. & Rosenthal, S. (1984) Suicidal behaviour by preschool children. ***American Journal of Psychiatry, 141 (4),*** 520-525.

Rotheram-Borus, Mary, J., Walker, J.U. & Ferns, W. (1996) Suicidal behaviour among middle-class adolescents who seek crisis services. **Journal of Clinical Psychology 52 (2),** 137-143.

Schmidtke & Hafner (1988) The Werther effect after television films. **Psychological Medicine, 18,** 665-676.

Schotte, D., & Clum, G. (1982) Suicide ideation in a college population : A test of a model. **Journal of Consulting and Clinical Psychology, 50,** 690-696.

Schotte, D.E., & Clum, G.A. (1987) Problem-solving skills in suicidal psychiatric patients. **Journal of Consulting and Clinical Psychology, 55,** 49-54.

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